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CEDAR MESA PROJECT

STATE UNIVERSITY OF NEW YORK AT BINGHAMTON

NATIONAL SCIENCE FOUNDATION GRANT NO. GS-33413-X

BUREAU OF LAND MANAGEMENT

UTAH

Progress Report

on

Year I of the Cedar Mesa Project

Under National Science Foundation Grant No. GS-33413-X

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December 31, 1972

ABSTRACT: During the 1972 summer season the Cedar Mesa Project commenced an archaeological survey of Cedar Mesa, Utah, under National Science Foundation Grant GS-33413-X. Two watershed units were surveyed, resulting in the recording of 145 sites. These range in time from the Basketmaker II period through the Pueblo III period. Many of the later sites exhibit pure, or nearly pure, assemblages of Kayenta or Mesa Verde ceramic types.

Use of the Wilcoxen two sample test verified hypotheses regarding site locations relative to Basketmaker II and Pueblo II-III sites. Some hypotheses on Basketmaker III site locations were not substantiated.

Cluster analysis and metric multidimensional scaling of botanical data were attempted to further refine gross physiographic divisions of the mesa. Several divisions were segregated, but additional ecological consultation is needed to fully interpret the findings.

A study of lithic materials, their sources, and relationships of materials to lithic tool types was also conducted. Six different types of Basketmaker II sites were defined on the basis of lithic tool type clusters.

Limited excavations were also accomplished. Several test pits were placed in the middens of two late Pueblo II-early Pueblo III sites, a Basketmaker II pit house was completely cleared, and a large Pueblo III hearth was also dug. A soil column from a dry cave site in Grand Gulch is being examined to recover dietary and environmental data.

PROGRESS REPORT ON YEAR I OF THE CEDAR MESA PROJECT

(NSF Grant No. GS-33413-X)

Fieldwork

During the summer of 1972, the Cedar Mesa Project was in the field for approximately three months. Prior to entering the field, five watershed units on the Mesa had been selected as the foci of our surface survey efforts. During the field season, two of these were sampled--the Bullet Canyon unit, and the Upper Grand Gulch unit. Twenty-two 400-meter-square quadrats, chosen at random, were surveyed in the Bullet drainage, and seven such quadrats were surveyed in the Upper Grand Gulch unit. These totals represent approximately seven percent of the available quadrats in each of these two units. We had initially intended to survey quadrats at a rate of 10 percent of the total areas, but preliminary tests of our findings indicated that we were getting good results at the seven percent level, so we decided to proceed at that rate. If this level of sampling proves satisfactory for the various tests we wish to perform, our first summer's work will have accomplished close to half of the survey. If analysis, later this spring, indicates that a higher rate is needed, we will have to return to the Bullet and Upper Grand Gulch units to survey additional quadrats.

Excavations were conducted at several sites. One burned Basketmaker III pithouse was fully excavated, and an adjacent and probably associated storage complex was partially excavated. The abundant burned wood samples from the pithouse are being studied at the Laboratory of Tree-Ring Research at the University of Arizona. Results are expected sometime in March. Several test pits were sunk into trash middens at each of two sites dating to the late Pueblo II-early Pueblo III time period, to determine if sufficient animal bone were present to warrant concentration on such locations in the 1973 field season. The results indicated

that abundant animal bone could be obtained if the fill were passed through 1/8 inch mesh screening. In addition to the above excavations, a large pit was dug in a dry cave site in Grand Gulch, and a column of midden approximately one and one-half meters high by 50 centimeters square was isolated and removed one layer at a time. Each layer was bagged separately and brought back to the laboratory, where the midden samples are now being separated into components by screening.

The environmental surveys were conducted coincident with the site surveys. Detailed botanical and physiographic checklists were filled out for each site and quadrat. Dr. Jack Major, consultant in botany and soils, spent two weeks with the Project early in the field season, and helped Project personnel develop skill in observation and reporting of environmental data. He also worked closely with Mr. James West, palynologist, who carried out systematic sampling of the modern pollen rain on the Mesa and in some of the surrounding areas. Study of the alluvial geology of the area was initiated with a brief visit by Dr. Larry Agenbroad, geological consultant. Pollen samples were also taken from alluvial sections by James West,and Philip Salkin, a graduate student from the University of Wisconsin, sampled an alluvial section in order to study the molluscs contained therein. Victor Fisher, of Towson State College, Maryland, cleared, planted, and cultivated four experimental farm plots.

Analytical Studies

One hundred twenty-two sites were recorded by survey in the Bullet unit, and twenty-three in the Upper Grand Gulch unit. The Bullet sites yielded 17,858 lithic items and 17,166 ceramic items; the Upper Grand Gulch sites produced 9,327 lithic and 15,644 ceramic items. All materials recovered on the survey have been individually labeled and cataloged. Preliminary classification of both the lithic and ceramic

materials has been completed for the Bullet materials, and is well underway for the Upper Grand Gulch materials. Classification of the latter should be complete by the end of March. Maps of each quadrat in both drainages have been compiled, showing, at a scale of 1" to 10 meters, the locations of all sites, features, and artifacts in the quadrat. Checklists of botanical, physiographic, and cultural attributes have been prepared for each site and each quadrat in the Bullet drainage. These checklists, plus the ceramic and lithic type inventories, have been punched on computer cards for all the sites in the Bullet unit. A number of computer programs are already running, and results are beginning to emerge. Some of the tentative results obtained so far for the Bullet unit are described below.

Preliminary Analysis of Variance Results

In the Bullet drainage, some significant differences have been observed in the distribution of sites of various ages, with respect to physiographic variables. Previously we had suggested (Lipe and Matson, 1971; Lipe and Matson NSF proposal) that Basketmaker II sites were likely to be located in canyons and on canyon rims so as to provide access to both the canyon and mesa top environments. If this is so, then the canyon and rim quadrats should have more evidence of BMII occupation than do the mesa top or upland quadrats. Using the Wilcoxen two sample test (Bradley, 1968:105), we find this is the case whether the criterion is numbers of BMII sites per quadrat or numbers of BMII artifacts per quadrat (Table 1). The probability that this distribution is due to chance sampling of a homogeneous population is less than two and a half times in one hundred for the distribution of artifacts--less than five times in one hundred for the distribution of sites. Thus the hypothesized distribution of BMII materials clearly occurs, even though at present we cannot prove that it occurs for the reasons suggested.

TABLE 1. SUMMARY SITE STATISTICS
FOR THE BULLET DRAINAGE

	BMII	BMIII	PII-III	TOTALS
Medians of quadrats ranked by number of sites	2 (1-3)	0 (0-1)	3 (2-4)	5 (4-6)
Medians of quadrats ranked by number of artifacts	182 (0-391)	0 (0-53)	1043 (382-1310)	1256 (714-1936)

( ) = ranges of 97% confidence interval

	BMII	BMIII	PII-III	TOTALS
Medians of rim and canyon quadrats, ranked by number of sites	2-3	0	1-2	4
Medians of upland quadrats, ranked by number of sites	1	0	4	5

	BMII	BMIII	PII-III	TOTALS
Medians of rim and canyon quadrats, ranked by number of artifacts	220-391	0-12	353-577	714-1022
Medians of upland quadrats, ranked by number of artifacts	116	0	1076	1310

We also had suggested earlier that due to a hypothesized dependence on dry farming, that PII-III sites would be concentrated on deep soil locations in upland parts of the Mesa. If this is true, then upland quadrats should have both a higher number of sites, and a higher number of artifacts attributable to PII-III occupations. Using the Wilcoxen test again, both sites and artifacts had significantly different distributions in upland versus canyon-rim quadrats (Table 1). The chances of these distributions being due to chance sampling of a homogeneous population were less than two and a half times in a hundred for both sites and artifacts.

Lipe and Matson had previously offered several hypotheses about the distributions of BMIII sites. It was suggested that an abundance of these sites would be found, and that they would have a distribution similar to that of the PII-III sites. Looking at the site summary (Table 1), it is clear that BMIII sites do not seem to be differentially distributed with respect to the upland versus canyon-and-rim dichotomy. Thus, while our hypotheses about the distribution of BMII and PII-III sites have been confirmed by preliminary analysis of the Bullet drainage data, some hypotheses about BMIII sites have so far not been supported.

Cluster Analysis and Metric Multidimensional Scaling of Botanical Data

These studies are based on the botanical checklists completed in the field. A total of 61 plants and five plant communities were regularly noted for each site, feature, and quadrat. Ratios of pinyon to juniper were also recorded in a number of areas. Using the presence and absence of the 61 categories as input, the Bullet quadrats were clustered using Dice coefficients as the measure of similarity/difference, and the furthest neighbor technique for the actual clustering of the coefficients. The results (Fig. 1) may be compared with the gross physiographic distinction made earlier between canyon-and-rim environments

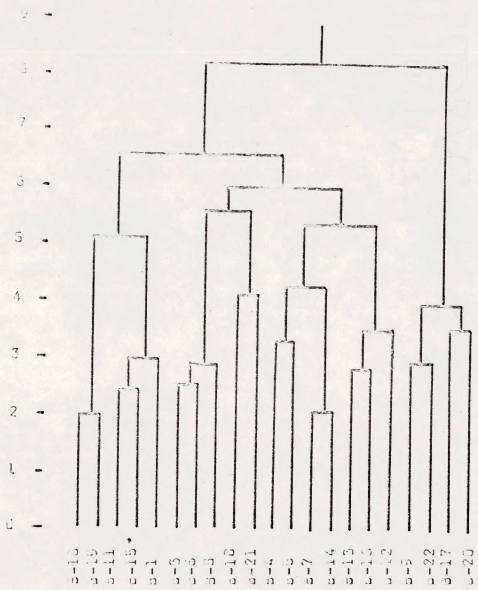

Figure 1.
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[illegible]
Dic. Conf.
Fairhurst
January 1973

on the one hand, and upland environments, on the other. While not exactly in accord with this dichotomy, the clustering of quadrats by botanical characters shows some agreement with it. One cluster (B-9, B-22, B-17, B-20) consists of quadrats located in canyons and/or on canyon rims. Another group, (B-4, B-5, B-7, B-14) consists of three rim and one non-rim (B-7) quadrats. The remainder of the groupings consist predominantly of upland quadrats. Whether the three or four groups shown on the dendrogram are useful and meaningful subdivisions of the botanical environment is not obvious. Consultation with our ecologist, Dr. Jack Major, is in order at this point.

Metrical multidimensional scaling of the same matrix (Dice coefficient) gave results very much in accord with our expectations. The most important vector contrasted quadrats partly in sage brush flats with those on the rim and/or partly in canyons. This vector probably reflects variation in vegetation correlated with soil depth--deep in the sage flats; shallow on the rims.

The second dimension is not as readily interpretable, but contrasts quadrats with big sage and all types of grasses with those having buckwheats, buffalo berry, cactus, cliffrose, and black sage. This vector may again be related to soil depth, or perhaps to degree of disturbance. Grasses are most coomon in the open sage flats that have been "railed" by the Bureau of Land Management and seeded to grass. The third vector contrasts quadrats that tend to have broad-leaved yucca, mustard grass, bitterbrush, and hilaria grasses with those lacking these plants. The fourth vector contrasts quadrats with all sorts of grasses with those having saltbush, tumbleweed, and winterfat.

Obviously, much work needs to be done to refine and interpret these botanical patterns. It does appear, however, that the botanical information may allow us to subdivide the environment in ways that may correlate with archaeological variation. A possible example of this is discussed below.

Analysis of Lithic Materials and Lithic Tool Types

Matson and his assistant, Sandra Johnson, at the University of British Columbia, have developed a typology of 36 lithic tool types and have classified the materials from the Bullet drainage in terms of this typology. Classification of the lithic materials from the Upper Grand Gulch unit is approximately 2/3 complete.

Don Keller, a graduate student from SUNY at Binghamton, is conducting a study of types of lithic raw material, their sources, and co-variation of lithic tool type with raw material. In the summer of 1972, he located a number of probable and possible sources of lithic raw materials, both on Cedar Mesa proper and in surrounding areas. In December of 1972, and January of 1973, he classified the lithic materials from several of the Bullet quads as to raw material type, and attempted to determine if utilization of raw material varied with time and with tool type. Tentatively, it does appear that sources of lithic raw materials were differentially utilized in the Basketmaker II period as opposed to the Pueblo II III period. Future work will attempt to tie down these tentative results, and to determine whether lithic source areas cluster in different areas during different periods. The latter type of analysis, in conjunction with study of subsistence patterns, might provide evidence that different environmental zones were in use at different times. Keller's study of co-variation in raw material and tool types also produced tentative indications that material and tool type do co-vary in some cases.

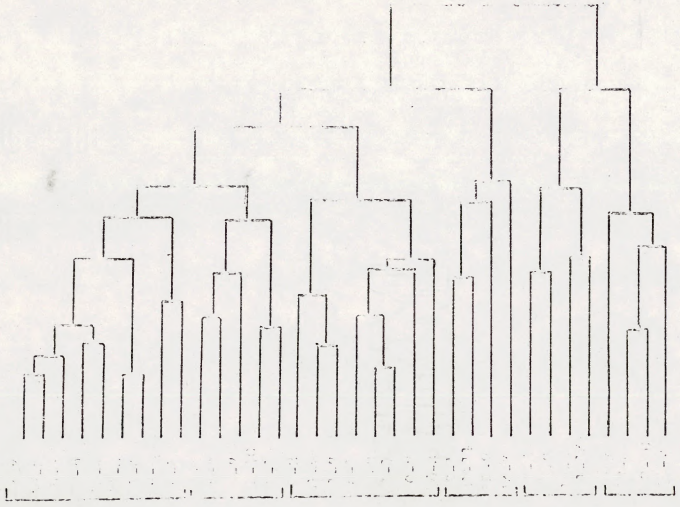
While much more work clearly lies ahead, results so far indicate that some lithic raw materials can be localized as to source; that particular types of material were sometimes sought for the manufacture of particular tools; and that raw material sources were somewhat differentially used through time. The latter, of course, could be the product of shifting tool type frequencies, combined with the linkage of particular tool types to particular raw material types.

Cluster Analysis and Metric Multidimensional Scaling of Bullet Basketmaker II Sites.

The 34 probable Basketmaker II sites from the Bullet drainage have been inspected in more detail than the sites of other time periods. Using the 36 lithic types mentioned above, Spearman's R has been calculated as a measure of similarity for all pairings of the 34 Basketmaker II sites. The resulting matrix of similarity scores was then clustered, using the furthest neighbor technique (Fig. 2). Six groups can be distinguished, at about the same level of clustering. The first cluster consists of relatively lightly occupied sites which have mostly flake tools and little else. Cluster II also lacks heavy core tools except for cores, and has an abundance of large knives and re-sharpening flakes. Cluster III contrasts with the previous two in having an abundance of core tools and hammerstones, but not many knives, drills, or points. Cluster V consists of small sites which do not have re-sharpening flakes, gravers, saws, or notched tools, but which do have T-shaped drills, pebble hammerstones, and cores. The final group of sites contains small knives, gravers, bifacial cutting flakes, and core tools, but little ground stone.

Thus there do appear to be different kinds of (probable) Basketmaker II sites. The reasons for these differences are, however, not yet obvious. As a guess, Cluster III might be habitation sites of some permanence, with the other groups representing various specialized activities. Much more analysis is needed, however.

Figure 2.
RM II Bullet
36 Lithics
Furthest S'R
January 1973



The same matrix of similarity scores when metrically scaled reveals interesting, but not entirely expected results. The first and most important dimension contrasts sites having re-sharpening flakes and saws with those having pebble hammerstones, choppers, crude bifaces, biface fragments, small knives, and drills. This dimension might indicate different activities; perhaps this can be verified later by R type analysis of tool associations in relatively small provenience units. The second dimension, one of scale, has a rank order correlation of .804 between the sites' position on the first dimension and the number of flake tools on each site. This vector, perhaps related to degree of sedentariness, or amount of site use, might be expected to be the most important vector, but is not. The third vector contrasts those sites containing all sorts of knives and no irregular hammerstones and cores with those sites with irregular hammerstones and cores. This vector may be related to activity differences, but is not immediately interpretable. Nor is the fourth vector. Thus, while vectors or "determinants" were obtainable and did not obviously violate archaeological expectations of associations, their cultural meanings and relationships are not yet clear. We are left with clear evidence of patterning, tantalizing hints of activity relationships, and much work to do to clarify both.

In attempting to discover the environmental constraints on cultural variation, 29 of the Basketmaker II sites were compared in terms of their botanical inventories, using the same procedure as for the quadrat botanical comparison described above. That is, pairs of sites were compared in terms of the presence and absence of plant categories; Dice's coefficient was calculated for each pairing; and a similarity matrix of the coefficients was constructed.

A cluster analysis of this botanically-based similarity matrix resulted in site groupings reflecting various plant sub-communities of the pinyon-juniper community. The site groupings based on botanical data were compared with groupings arrived at by clustering the sites in terms of lithic type inventories. No obvious correspondence was noted.

Then the botanically-based similarity matrix was subjected to multidimensional scaling, and the results compared with the scaling of the artifact-based matrix. The first dimensions of the two scalings did show some similarity. A Spearman R of .496 was calculated significant at more than .005 but less than .001. Thus, the most important artifactually-related vector of Basketmaker II sites is related in a positive fashion with the most important botanically-related vector. The latter appears to reflect variation of plants with soil depth, as was noted in the analysis of botanical variation among quadrats. The relationship between the artifactual and botanical scalings of the Basketmaker II sites thus can be interpreted to suggest that the shallower the soils, the more hammerstones, choppers, small knives and drills were found on sites, while the deeper the soils, the more re-sharpening flakes and saws were found. This relationship might possibly be due to some erosional process, but more probably it is related to difference in activities that in turn relate to differences in plants or physiography. At this point, the discovery of the empirical relationship among artifact types, plant types, and (by inference) soil depth, is important. Postulating various activities lying behind the relationship and looking for confirmatory evidence are obviously tasks requiring much future work. Exciting environmental-artifactual relationships are, however, beginning to appear. As we continue these sorts of analyses, supplementing them with R type analysis of type associations and with use of detailed physiographic information, the activity nexus between cultural and environmental variation will be elucidated.

Analysis of Ceramics

All the sherds from the Bullet quadrats have been classified in terms of standard Southwestern ceramic typologies. Classification of the ceramics from the Upper Grand Gulch quadrats is approximately half complete. For the Bullet drainage, ceramic data for sites and quadrats have been punched onto computer cards, and both sites and quadrats are being clustered and scaled in the same fashion as described above for the non-ceramic sites. "Bugs" in one of the programs delayed this process somewhat, but results are now beginning to emerge. There has not yet been time, however, to interpret the results.

Subjectively, a look at the ceramics from the Bullet drainage indicates that the Pueblo II-III occupation was much heavier than the Basketmaker III occupation--a judgment already made on the basis of field classification of sites. Pottery of the Kayenta tradition is in a distinct minority as compared with pottery of the Mesa Verde tradition. Some sites are nearly pure Kayenta; some are pure or nearly pure Mesa Verde; and some have a predominance of Mesa Verde with some Kayenta sherds. By and large, the sites with nearly pure Mesa Verde tradition ceramic inventories appear to be later than the ones having moderate to strong Kayenta representation.

Initial results from the Upper Grand Gulch drainage, which lies north of the Bullet drainage, suggest that Basketmaker III sherds are considerably more abundant in the former than in the latter. Furthermore, Pueblo II types seem relatively more common in the Upper Grand Gulch area than in Bullet.

Dendrochronology

Dr. Jeffrey Dean of the Laboratory of Tree-Ring Research at the University of Arizona is currently analyzing specimens from the 1969, 1970, and 1972 seasons. Charcoal fragments from GG-69-1, a Basketmaker II pithouse, have produced a series of dates ranging between 256 and 309 A.D. None of these is a cutting date,

but the clustering suggests that the true date is not likely to be much later than this. This date also agrees well with the C-14 date from the site, of A.D. 295 ± 80. Another series of dates is coming in from a large rectangular slab-outline hearth, at site GG-69-15. These dates cluster in the early to middle 1100's. This is a distinctive type of feature; several others have been excavated. It had been thought on distributional grounds, and on the basis of lack of ceramic associations that these features were pre-ceramic and probably related to the Basketmaker II horizon. It now appears that at least some are Pueblo III--they apparently represent activities in which ceramics were not involved. It will be most interesting to see the results of the dendrochronological analysis of the charcoal from the other two such features that have been excavated.

Palynology

Dr. Richard Hevly of Northern Arizona University has analyzed a number of archaeological and several modern pollen samples collected in the 1969 and 1970 field season, and has prepared a preliminary report. Mr. James West has collected numerous modern pollen samples from Cedar Mesa, and is currently working on archaeological samples from the 1972 excavations. West feels that his modern samples adequately reflect the modern botanical variation in the Cedar Mesa region, as checked against his and Jack Major's inventories of plants found in the sampling locales. The archaeological samples from the 1969, 1970, and 1972 seasons show consistent departures from modern pollen profiles, generally in the direction of less arboreal pollen, and higher frequencies of cheno-ams and grasses. This situation is obviously interesting, but much more work needs to be done to interpret it, including comparison of pollen results with other lines of evidence. At present, several alternative explanations seem possible--

the climate was different, and probably drier, in the archaeological period; man's occupation stressed the environment in the area of the sites, resulting in decimation of trees and expansion of weedy plants; or that pollen samples from the sites are heavily affected by pollen brought in with plants harvested for economic or ritual purposes.

Analysis of Macroscopic Faunal and Botanical Remains

Mr. George Ruffner of the Biology Department at the Museum of Northern Arizona identified the animal bones collected during the 1972 excavations. Full interpretation of the inventory and distribution of bones has not been done, but all the material appears to be of species that could be expected to occur in the Cedar Mesa area. Several specimens were found of a species of rodent that ordinarily inhabits moist mountain meadow environments quite different from the locality around the site where the specimens were found. This could possibly indicate the local environment was different in the past, but is more likely the result of transport of the specimen into the site by its inhabitants.

A good deal of time has been spent in sorting the midden column sample from the dry cave site excavated in Grand Gulch. The samples are being passed through screens of graduated size to break the midden material down into size components. The larger size components are quite rich in well preserved organic materials, including seeds, plant parts, charcoal, and feces. These materials are in turn being sorted into groups by general type of material. The charcoal will be sent to Dr. Dean, the feces to Dr. Fry, our consultant for fecal analysis, and the botanical materials are being identified by Mr. Michael Theroux, a botanist in the Department of Biology at the Museum. The analysis of the midden samples thus appears promising, but will be more time consuming than had previously been expected.

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NUCLEAR POWER PLANT SITE SELECTION

ARIZONA PUBLIC SERVICE CO.

TUCSON GAS AND ELECTRIC CO.

SALT RIVER PROJECT

STATE, PRIVATE AND BUREAU OF LAND MANAGEMENT LAND STATUS

MARICOPA AND YUMA COUNTIES, ARIZONA

Preliminary Report

for

A Phase I Examination of the Cultural Resources in

Rainbow, Hassayampa and McMullen Valleys, Under

Consideration for Possible Nuclear Plant Site Selection

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October 16, 1972

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ABSTRACT

In October 1972 the Museum of Northern Arizona contracted with the NUS Corporation, consultants for the Arizona Public Service Co., Tucson Gas and Electric Co., and the Salt River Project (participants in a nuclear reactor project) to conduct an archaeological clearance investigation. The purpose of the investigation was to provide a preliminary statement on the cultural resources of three valley localities (Rainbow, Hassayampa and McMullen Valleys) for appraisal in selection of a proposed nuclear power plant construction site. A literature and site search were undertaken, and a four-day field reconnaissance was made, with resultant comparative statements of areal archaeological potential. It is anticipated that these statements of potential will aid in the narrowing down of areas to be considered for possible plant sites. A second phase of archaeological investigation is anticipated, and alternative modes of future action are discussed.

INTRODUCTION

This archaeological clearance investigation was made for the NUS Corporation, consultant for the Arizona Public Service Company, Tucson Gas and Electric Company and the Salt River Project, participants in a nuclear reactor project, to provide an initial statement on the archaeological, historical and ethnological resources within specified areas in west-central Arizona. The scope of this study, Phase I, corresponds to what the National Park Service has described as the "preliminary reconnaissance" stage in the preparation of an impact statement on human cultural resources. This report provides an appraisal of the cultural resources of three valley localities under consideration for a proposed nuclear power plant construction site.

Three major areas have been designated for preliminary study; Rainbow Valley, southeast of Buckeye, in Maricopa County; Hassayampa Valley, northwest of Buckeye, also in Maricopa County; and McMullen Valley, west of Wickenburg, primarily

situated in Yuma County. Each valley has designated within it prime and secondary parcels, with the prime areas encompassing a total of approximately 355 sq. mi. and the secondary areas about 425 sq. mi. The entire area is within the Gila River drainage system, with Waterman Wash bisecting Rainbow Valley south of the river, the Hassayampa River bisecting Hassayampa Valley north of the river, and Centennial Wash bisecting McMullen Valley also to the north. For the purposes of this study, consideration is given only to the areas designated as "prime" since the inclusion of the secondary areas would have been infeasible due to time limitations.

September 28, 1972, NUS Corporation contracted with the Museum of Northern Arizona to conduct preliminary archaeological clearance investigations within the three areas designated for a possible location of the nuclear power plant. The land utilized for the plant locality would involve approximately 5,000 acres area, while the actual area to be developed would be only 5 to 10 acres, with several sites for wells of one-half acre each. The many facets of construction and the inevitability of increased human disturbance require the consideration of the entire 5,000 acre area in any discussion of archaeological resources.

This study is to estimate the archaeological and ethnological factors in the three areas, and to appraise the impact which the proposed project will have on each of these areas. Information from this initial overview in the form of recommendations will be made in each area and possible preferability of one area over the others or of certain sub-areas within an area. These recommendations can then be used as a guide in the narrowing of possibilities of site locations. This report is a preliminary estimate on the archaeological, historical or ethnographic resources of the areas involved. It is not a final assessment of the resources.

As the first phase of a multi-phase operation, this study is the first step in the preparation of a comprehensive environmental impact statement in response, primarily, to the National Environmental Policy Act, 1969 (Public Law 91-190). The NEPA-69 act is concerned with providing the protection of the overall environment, including cultural and social resources. In accord with the act, this report will provide the project planners with: 1) an evaluation of possible alternative courses of action; 2) an idea of the cost of future studies necessary, so this cost factor can be included in the future budget; 3) an idea of the time needed to prepare and carry out additional research, so that this factor can also be included in project planning.

METHOD AND SCOPE OF THE STUDY

The research for this study consisted of two coordinated parts. First, an extensive library search was made of pertinent literature on the general areas, as there has been virtually nothing written concerning the prime areas. A search was also conducted through the archaeological site files of the Arizona State Museum, Tucson; Arizona State University, Tempe; Prescott College, Prescott; and the Museum of Northern Arizona, Flagstaff, to determine whether sites have been found previously in the tracts of land under consideration. The second part of the research consisted of a four-day ground reconnaissance of the possible plant locations. This reconnaissance was designed to cover most major sub-areas within each prime area in each of the three valleys. Such an on-location survey provided an opportunity to examine each area individually and to form a professional opinion regarding the relative density of archaeological sites in an area, as well as the kind and size of sites present. It is on the basis of the total of this field and library research that the statements and

recommendations about cultural resources have been made. None of this research has been extensive enough to provide anything more than a guide to assist in the process of site selection, and it cannot be construed as a statement of archaeological clearance.

TOPOGRAPHY AND ENVIRONMENT OF THE RAINBOW, HASSAYAMPA AND MCMULLEN VALLEYS

The three valleys considered in this survey, Rainbow, Hassayampa, and McMullen, are situated between mountain ranges consisting largely of intrusive granite and quartz, with a certain amount of metamorphosed sedimentary and volcanic characteristics. The valleys themselves are homogeneous in that they are all composed of sedimentary deposits, mainly gravel, sand, and silt in the form of floodplains, terraces and fans. Within the general area of west-central Arizona, the lowland sedimentary deposits also include dune sands, lake deposits, and landslide masses (Wilson and others, 1969). This area contains 'desert pavement', a condition discussed by Hayden (1965) as having archaeological implications in some instances of Archaic human occupation of the desert.

The areas with which this survey is concerned are presently semi-arid. The town of Buckeye can be taken to be climatologically equal to both the Rainbow and Hassayampa Valleys, where present annual rainfall averages 7.44 in. (Smith 1956: 68). The town of Salome, in the McMullen Valley, averages 8.73 in. annually (Smith 1956: 70). Temperatures in Buckeye range from an average low of 22.4°F. in the month of January to an average high of 114.6°F. in June. For Salome, the average low temperature for the month of January is 22.8°F., whereas for July, the average high is 112.7°F. (Smith 1956: 37, 42). Elevations in Rainbow and Hassayampa

valleys range from 1200 to 1600 ft. (with the exception of Flatiron Mountain in Hassayampa Valley, which reaches a height of 1770 ft.). McMullen Valley is slightly higher in elevation, ranging from over 1800 to 2500 ft., with peaks reaching over 3000 ft. Elevations within the mountain ranges surrounding these valleys vary between less than 3000 and more than 4500 ft., the highest of these being located near McMullen Valley.

In keeping with these soil, rain, temperature and elevation considerations, the biotic communities encountered in these valleys are contained within the category of the southwestern desert shrub division of the Lower Sonoran Life Zone, which in this instance implies a preponderance of creosote, and some sahuaro, palo verde and mesquite. Barrel cactus, "hedgehog" cactus, and grasses are also prevalent. The larger fauna consist of ungulates and carnivores of limited diversity, with a large range of mammalian and reptilian microfauna, and diverse passerine birds in evidence. It is perhaps of interest to note, since they are of hunting importance, that mountain sheep are to be found (and were once in abundance) in the Big Horn Mountains and in the northern Gila Bend Mountains to the west of Hassayampa Valley.

Water sources in these three areas must be considered both prehistorically and historically. Prehistorically, water was obtained from natural tanks, springs and seeps in the surrounding mountains (Gifford 1936:254); from occasional desert waterholes; from intermittently running washes, such as the Centennial and the Waterman; and from the Hassayampa and Gila rivers. Historic water sources have included man-made tanks and wells, in addition to all of the above. The Gila River can no longer be considered a permanent surface water source, since the massive reclamation efforts of the 1920's. Channeling of the Gila, however, is not

a recent phenomenon: canals have been dated coincident with the prehistoric Hohokam occupation.

CULTURE HISTORY OF THE RAINBOW, HASSAYAMPA AND MCMULLEN VALLEYS

Desert Culture

The first discussion of "Desert culture" was made by Jennings and Norbeck (1955: 2-4). They presented a concept of those subcultures which adjusted to the arid regions in the Western Great Basin (from Baja California to northern Utah and between the Sierras and the Rocky Mountains) from ca. 7000 B.C. to A.D. 100. These early desert dwellers apparently made use of hunting and gathering techniques, which would involve a lack of permanent habitation sites and the use of core-and-flake tools, sleeping circles, shrines, rock outlines, trails, and later, grinding implements. Early Desert culture finds of this nature have been made within the general region in which this survey was carried out (Kemrer and others 1972: 22-29). However, no such sites have been recorded within the specific areas with which this survey is concerned, and none were found in the course of the reconnaissance itself. A more intensive survey may reveal Desert culture occupation within these three valleys.

Yavapai

The possibility of continuous cultural occupation of an area is a matter which should be mentioned when dealing with the cultural history of that area. There has been a certain amount of theoretical discussion (Rogers 1945, Schroeder 1963) to the effect that the Western Great Basin's Desert culture people may have been the predecessors of certain groups still in existence within roughly the same area.

Rogers, in dealing with Yuman prehistory (1945: 168-169), outlines a movement of people from the Pacific slope of southern California across the California desert to the valley of the Colorado River (from Black Canyon south to the delta). There then occurred, according to his theory, the acquisition of some new traits, such as agriculture in the delta area, with subsequent movement across the Colorado and into the western half of Arizona, and a continuation of the hunting and gathering subsistence base in the absence of extensive water. The Yavapai are the easternmost extension of the Yuman groups, and they have apparently occupied the same large area of western Arizona as hunters and gatherers (with marginal agricultural activity) (Schroeder 1954: 21) since at least the sixteenth century (Rogers 1945: 193). There exists, therefore, the probability of a long, continuous proto-Yuman to Yuman occupation of the region of this survey, culminating in the present-day Yavapai.

The Yavapai sub-group whose territory falls into the area of this survey are the Western Yavapai. Their boundaries extend to the Bill Williams River on the north to west of the Agua Fria River on the east, to the Gila River on the south, and to east of the Colorado River on the west. Within this broad area, small groups of Western Yavapai at one time covered all ecological zones from desert to river to mountains, in pursuit of game and plants (Gifford 1936: 247).

The McMullen and Hassayampa valleys and the landmarks contained within them have occasionally found their way into the literature on the Western Yavapai, although no officially recorded Yavapai sites exist yet within them. Spanish expeditions through Yavapai country were not numerous; indeed, between 1605 and 1860, there is no written record of expeditions in the area at all (Schroeder 1954: 206).

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Wickenburg, encountering 17 deserted Yavapai rancherias (Schroeder 1954: 96). Other references at the time to raiding patterns of the Yavapai would indicate that all three valleys were travelled in the course of raids or warfare (Schroeder 1954: 180).

Gifford, during his Yavapai ethnographic fieldwork in the 1930's discovered also that the Hassayampa River Valley was Western Yavapai territory (Gifford 1936: 251) and the the word 'hassayampa' was Yavapai. In addition, he found that a branch of Western Yavapai known as 'the people of two mountains' lived in the area of the Harquahala and Harcuvar mountains, both of which are also Yavapai words. Mescal and other gathered products were found by these people in the Harquahala Mountains, as well as water in natural "tanks" (Gifford 1936: 254). In summary, with intensive survey, it might be anticipated that Yavapai sites would be found in Hassayampa Valley and in McMullen Valley.

Hohokam

The existence of Hohokam culture within the general geographic area of this survey has been theoretically established by previous surveys. Hohokam ruins dot the Gila River valley; in a 1965 survey, Vivian found 25 Hohokam sites, chiefly in Dendora Valley, below Gila Bend. Breternitz (1957) and Schroeder (1961) both found Hohokam sites on the Lower Gila River west of Gila Bend, and Wasley and Johnson have carried on Hohokam excavations in the Painted Rocks Reservoir area (Wasley and Johnson 1965). Miscellaneous Hohokam sites have also been recorded along the Gila River north and east of Gila Bend.

In addition, the existence of Hohokam material north of the Gila has been established. Schroeder (1963a: 15) has hypothesized a northward diffusion of the Hohokam out of south-central Arizona, especially during the Colonial and Sedentary

periods. The places in which he mentions particular intrusions include the Agua Fria River valley to the east of the Hassayampa, and Prescott (northeast of this survey's study area). Sites have actually been found along the east side of the White Tank Mountains, which form the eastern borders of the Hassayampa Valley. Gifford (1936: 247) stated that a good deal of Yavapai territory is dotted with the ruins of large agricultural villages, by which he most probably meant Hohokam village sites.

Of a specific record of Hohokam occupaion in this survey's area of study, less can be said. Eight sites recorded at the Arizona State Museum are at the northern tip of the Sierra Estrellas within the northern portion of the Rainbow Valley area. Furthermore, Hohokam material was found in the same locality during the course of this reconnaissance. For the Hassayampa and McMullen valleys, there is no evidence of Hohokam occupation to be found in the literature. In conclusion, more intensive surveying may or may not reveal Hohokam sites in Hassayampa and McMullen Valleys, and the record of Hohokam occupation within Rainbow Valley may or may not be expanded.

Pima and Maricopa

When the Spanish arrived on the Gila River in the vicinity of the Casa Grande ruins, they met a group of people who are known to us today as the Gila River Pimas (now of the Gila River Indian Reservation. These were a group of approximately 3000 agriculturalists who occupied the valley of the Gila itself, in addition to the lowlands south of the river, living in extended villages from Gila Bend to Casa Grande (Ezell 1961: 9, 133). At that time, they were sharing the westernmost part of their territory with the Opa and Cocomaricopa (or Maricopa and Kaveltcadom), two riverine

Yuman groups drifting east along the Gila in response to pressure from the Yavapai and other Yumans (Ezell 1963: 246).

By the time the United State gained control of the Gila River area (the mid-1800's), the Pima numbered some 4000 people with some villages still in the lowlands south of the river, and with river-side villages from south of the Sierra Estrellas to north of Casa Grande (Ezell 1961: 134 and map 3). By this time, the Maricopa had moved upstream to the southern end of the Sierra Estrellas, and the Kaveltcadom had merged with the Maricopa, losing their identity as an individual group (Ezell 1963: 25). Warfare between the Maricopa and the Yavapai during the mid-1800's involved both of these groups as well as the Pima (as Maricopa allies) in the area of the Gila-Salt confluence (Spier 1933: 50).

Not much is known regarding Maricopa and Pima occupation of land north of the Gila during the period of Spanish exploration (1694 to 1795) for the simple reason that the Spanish travelled almost solely along the south side of the Gila River; on the other hand, Sedelmayr mentioned in 1746 that most villages were situated on both sides of the river (Ezell 1961: 113). It is fairly certain, however, that the Maricopa and Pima did not place villages far north of the Gila, even on the Hassayampa River, because that area was regarded as rapidly approaching Yavapai territory. Also, there is mention in the literature of an empty area (despoblado) north of the Gila, between the Maricopa and the Yavapai (Spier 1933: 97).

It may be assumed from the above discussion that there may be Pima and Maricopa archaeological material within the Rainbow Valley area (of the river village type in the northernmost prime area, and of the lowland village type in the rest of the valley). Piman material, if found, could be of the pre-Spanish to the present periods;

Maricopa material, though, should not have come into the Rainbow Valley until after the Spanish entry into the Gila River Valley. There are no recorded sites of Pima or Maricopa derivation to be found in the literature within the area covered by the survey. However, during the survey one site of possible Maricopa affinity was found in the northern prime area.

Spanish

Spanish exploration of the country involved in this study was of a limited nature. There were no explorations between the Bill Williams and Gila rivers, east of the Colorado and west of the Verde rivers (Schroeder 1954: 63, 75). Therefore, it can probably be stated that no early Spanish remains would be found in the McMullen and Hassayampa valley areas of this survey, even after intensive surveying. However, travel in the Rainbow Valley area is well documented, and trails are known from around the southern tip of the Sierra Estrellas through the valley to north of Gila Bend during the Jesuit period, from 1694 to 1767. During the Franciscan era (1768-1795), trails cut through the northern prime area only (Ezell 1961: Maps 2 and 3). Spanish sites may conceivably be found in Rainbow Valley.

Anglo

The Gila River area very quickly became an area of agricultural activity for the Americans who settled there. The present town of Buckeye, near Rainbow Valley, was named for a canal in the area, and the builder of that canal and founder of the town was buried by Waterman Wash. R. G. Vivian, (1965:104) when surveying the lower Gila to the Painted Rock Mountains, found five Anglo ranch/farm sites along the Gila River. It can be seen, then, that this type of archaeological data might present itself in a more intensive search of Rainbow Valley. Cattle tanks appear

on maps of all three valleys, and other evidence exists of present-day cattle ranching in all three areas as seen during the reconnaissance. Therefore, the sites of early ranching establishments might be found in any of the three areas.

The Butterfield Stage Route, in operation from St. Louis to Los Angeles from 1857 to 1867, cut through the southern tip of the Rainbow Valley area, on its way to the Gila Bend Stage Station (Berge 1968:238). There are no recorded sites of Butterfield Route association within the Rainbow Valley survey area, but further surveys might possibly yield some.

In Hassayampa and McMullen valleys, mining activities took place from the mid-1800's on. A brief search of the literature yielded no information on mining within the prime area of Hassayampa Valley, but much information on foothill gold mines and riverside mills in the secondary area (Sherman and Sherman 1969) makes the prime area one worth inspecting for this type of activity. Much the same situation exists for McMullen Valley, with Salome and the Hercules Mine and other places to be found within the secondary area, and mining prospect claims scattered over the prime areas. Here again, no recorded sites were found in the literature within the prime areas, but an exploration of the area could result in the discovery of sites. One historical site was located during this reconnaissance in the southern prime area.

McMullen Valley's situation differs from that in Hassayampa Valley, in that mining activity there spurred the construction of a railroad in 1905 from Salome to Matthie whose purpose was to transport mined materials to the west coast; in 1907 it was extended to Parker (Myrick 1966:30). The building of this railroad caused wayside stations such as Wenden, Love and others, to spring up. *When tourists

* Later, when the railroad began to carry passengers, these wayside stations provided needed supplies and services.

began travelling by car west from Wickenburg, the roads followed the route of the railroads and the roadside stops, and places such as Dick Wick Hall's Laffin' Gas Station in Salome began to gain nationwide fame (Myers 1970:270). U.S. Highways 60 and 70 now almost parallel the railroad through the southern prime area of McMullen Valley, and there may be abandoned facilities along both road and railroad which might be discovered by further surveying.

Areas of Possible Cultural Sensitivity

As part of the research for the project, areas of potential cultural sensitivity were examined. These are places which have symbolic meaning for local groups of people, and whose destruction or use for a nuclear power plant might be offensive to these people. Places with this sort of potential within the general area include: Piman shrines which are found in the mountains near the Gila (Ezell 1961:79) and buttes and mountains in the area (including the entire range of the Sierra Estrellas) which are identified by Yavapai and Maricopa mythologies as 'sacred' (Spier 1933). While none of these sacred places are within the designated areas, some objections might be raised to the building of a nuclear power plant directly adjacent to them. Also, it is quite possible that not all of the culturally sensitive places in this area are to be found in the written record. In order to investigate these possibilities, it is recommended that consultation be carried on with the Yavapai, Pima and Maricopa tribes, with the idea in mind that ethnographic work may need to be done. This work should be done by qualified ethnologists, and not be archaeologists.

ARCHAEOLOGICAL AND HISTORICAL RESOURCE RECONNAISSANCE OCTOBER 1972

From October 6 through 9, 1972, the Museum of Northern Arizona conducted

a reconnaissance of the Hassayampa, Rainbow and McMullen valleys to provide a background with which answers could be provided to several questions put forth by the sponsors of the survey: 1) Within each of the areas under consideration for possible construction, how many archaeological sites are there of significance? 2) What percentage of the ground do the sites occupy in each area? and, 3) What is the relative rating of these sites in terms of scientific importance? Partial answers could be made to the first two questions, though obviously with only four days in which to survey over 350 sq. mi., no conclusive statements can be made. The third question is one for which no answer, other than that within the realm of current anthropological theory, all sites are of equal scientific importance. This holds true for everything from small hunting and gathering camps to extensive prehistoric villages covering several acres, and even to tin can scatters from a mining operation of 40 years ago. If a historian or historical archaeologist is working on the mining activities of the first half of this century, the tin can scatter would then be of more importance to him than the hunting camp. On the other hand, a prehistoric archaeologist might be more interested in either the village or the campsite, depending upon his particular interest or problem orientation. Therefore, in terms of relative scientific importance, any surveyor, no matter how intensive his survey, must remain impartial, and record all the sites as they occur. Later, if excavation becomes necessary, then, in the application of an extensive research design, certain sites may be designated as more important than others for a particular problem to be solved. Even at the excavation stage, however, all the sites might be deemed equally important; this would necessitate the excavation of each one.

To conduct the ground reconnaissance, each of the three valleys was considered

a separate natural study area with each of the two prime areas in each valley serving as an arbitrary sub-area. In finding out as much as possible about each of the prime areas, the entire range of ecological diversity within an area should be examined rather than intensively surveying one small section of each which may or may not be representative of the entire prime area. To cover this diversity, linear transects were surveyed which ran the length and width of each area. Optimally, a cross or 'X' type pattern would be surveyed, in cases such as this, but due to either the absence of roads or to the inaccessibility of areas due to extensive recent flooding, such patterns could not be followed. Instead, an attempt was made to cross the area in two directions in whatever pattern was possible. This was achieved with moderate success in all six prime areas. A small area in each valley was also surveyed more intensively to serve as a check on the more extensive survey. The land which was actually looked at (approximately 10 gross acres) represents less than one per cent of the 355 sq. mi. under consideration, and is not necessarily a representative sample. Nevertheless, it allows a general picture of each of the large areas, providing an insight into the frequency and size of sites present. Certain things such as the range of ages, functions and cultural affiliations of sites are not readily determinable due to the limited nature of the survey and the lack of published data on the areas.

As a further aid in the selection process for the plant location, an estimate is made in this report of the archaeological resource potential of different ecological sub-areas within each of the prime areas. This estimate is based on relative amounts of unassociated scattered cultural material found in different locales, and on a professional opinion obtained from observing those same areas. Each of these

'estimates' is a statement about the probability of the relative site frequency in a given area. This is additional information for the data base which will eventually be used to make a final site selection, and is not an absolute account of cultural resources.

The prime areas are broken down into natural site areas which are subsequently rated on an arbitrary scale of high, medium or low potential for archaeological sites. High potential areas probably have more sites than medium or low potential areas, and medium potential areas have more than low. This rating is made on a relative basis, comparing only those prime areas under consideration and subareas within them. The accuracy of such a statement cannot be certain, and the only sure test will be to conduct a more intensive survey, a step to be taken only after a narrowing down of the possible site location areas.

DESCRIPTION OF THE STUDY AREAS

Rainbow Valley

Of the three main areas, this is the only one in which the two prime areas have different environmental contexts. The northern area (T1SR1W; T1SR2W) is directly adjacent to the Gila River and the minor washes that transect it drain directly into the Gila, rather than into Waterman Wash, which bisects the entire valley. This area consists of a large number of rocky hills and mountains interspersed by a series of flat plains covered with desert pavement. In the area, three sites were found on this survey (RV1, 2 and 3) and eight sites were found to be recorded in the Arizona State Museum's site survey files (Ariz. T:11:5,8,9,10,15,19,20 and 21). The large number of sites found in this one area (the smallest of all six prime areas) may be attributable to one or both of two possible situations: 1) There is a much

higher concentration of sites in this area than in either of the other six. 2) More intensive survey was carried on in this area, resulting in the discovery of more sites. The first possibility might be due to the area's proximity to the Gila River, a source of permanent water and farmland prehistorically, or to the numerous hills and mountains which may have provided an ecological advantage of some kind (such as protection, increased game, etc.). The second possibility might be due to the fact that several surveys have been conducted in the area previously either along the Gila (Vivian 1965) or in the Sierra Estrellas (Al Johnson; no written manuscript); whereas no surveys have been conducted in the vicinity of any of the other prime areas. In the present reconnaissance this was the first area surveyed; it was examined somewhat more intensively than the others, because the time factor was still being experimented with. The eight sites found by ASM are all Hohokam, ranging in size from approximately 200 sq. ft. to several acres. Of the three sites found in this area during the present survey, one is a sherd scatter 200 by 200 ft. of unknown cultural affiliation, the second is a lithic quarry area, 50 by 75 ft., also of unknown cultural affinity, and the third is a sherd scatter 200 by 50 ft. very late in the time spectrum, and possibly Maricopa.

The entire north prime area in Rainbow Valley has a high potential rating except for a small section to the south given a medium rating (T1S R1E Sec. 23, 24, 25 and 26). This is the only prime area considered to possibly have a density of archaeological sites high enough to preclude building a 5 to 10 acre plant without destroying a site of some kind. Therefore, of all the possible areas, this one is the least favorable, in terms of its archaeology, in which to build a plant.

The southern prime area in Rainbow Valley (T3S R1E, T3S R1W, T3S R2W,

T4S R1E, R4S R1W), unlike the northern one, is part of the immediate Waterman Wash drainage. The terrain is flat except in the three areas where low mountains or foothills of the Maricopa Mountains jut sharply out of the plain. The entire area is bisected by an extensive series of small dry washes, between which there is desert pavement. No sites were found in this area either during the ground reconnaissance or in the search of survey files. Again, this does not mean that there are no sites here. It simply means that none have been found to date. There was a scatter of cultural material found, especially in those areas rated high or medium. The area around each of the included mountains is given a potential rating of high (T4S R1W Sec. 7,8,9,10,18,17,16,15, and 21; T3S R1E Sec. 3,4,9,10,11,14,15,16,21, 22,23,27, and 34; T3S R2W Sec 24; T4S R1W Sec. 11,12 and 13). The Butterfield Stage Line cut through the southern tip of the area, and the land around it is rated high as well (T4S R1E Sec. 16,19,20,21; T4S R1W Sec. 22,23 and 24). Because of the historical significance of this stage line it is recommended that this area be completely avoided if at all possible. The area on either side of Waterman Wash is considered to be of medium potential (T3S R1W Sec. 8,9,16,17,20,21,38,29,32 and 33; T3S R1W Sec. 4,5,9 and 10). The remainder of the area is rated low in potential, and there should be numerous areas where a 5 to 10 acre development would destroy virtually nothing archaeologically, and the entire 5000 acre tract would include few sites of any kind.

Hassayampa Valley.

The two prime areas in this valley are in basically the same ecological contexts, but on opposite sides of the Hassayampa River. The valley is bordered on the east by the White Tank Mountains and on the northwest by the Belmont Mountains, while

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the southwest opens out to the Tonopah Desert. Both sides are cut with numerous major and minor tributaries of the Hassayampa with wide flat areas in between, interrupted only by the foothills of the adjacent mountain ranges. This latter phenomenon makes up the only major difference between the two areas: the east area includes only occasional foothills, all of which are on the far east side, with a wide uninterrupted expanse between the mountains and the river; the entire west area is dotted with hills which are interspersed with large scattered patches of completely flat space. Since there tends to be more cultural activity in and surrounding elevated areas, especially if there are abundant washes and arroyos nearby (as there are around the hills in the west area), much more of the west area is rated medium in potential than of the east area. In the west, a small section around and to the north of Flatiron Mountain is rated high (T3N R6W Sec. 13,24 and 25), while the area to the south and east of Flatiron (T2N R5W Sec. 5,6,7,8,17,18; T2N R6W Sec. 1,12 and 13) is rated low, along with a section between Jackrabbit Wash and the Hassayampa (T3N R5W Sec. 3,4,9,10,15,16,21 and 22). The remainder of the areas (T3N R5W, T3N R6W, T2N R5W, T2N R6W) is considered to have a medium potential. While no sites were found in the west prime area, either in the site files or on this survey, two "ruins" are marked on the USGS Map Belmont Mtns., Ariz. 1962 (T2N R6W Sec. 13, SE¼ and Sec. 24, NW¼). An attempt was made to reach these sites, but they were not immediately accessible; therefore, their size and cultural affiliation remains unknown.

In the east prime area a single site (HV 1) was found on this survey; it is a historic site dating to between 1930 and 1940. It is approximately 100 by 200 ft. and consists of a cement slab foundation, associated tin cans and glass, and a large

rock-outlined SOS sign. As far as resource potential is concerned, the land immediately adjacent to the mountains (T3N, R4W, Sec. 11,14,23,26 and 35; T2N, R4W, Sec. 23 and 24) is rated high; the area just to the west of the mountains, slightly elevated above the valley floor (T3N R4W Sec. 3,4,10,14,15,22,23,26,27,35 and 34; T2N R4W Sec. 1,2,11,12,13,24,26 and 34) is ranked medium. The majority of the rest of the area (T3N, R5W, T3N R4W, T2N R5W, T2N R4W and T1N R4W) has a low potential rating.

In both prime areas a plant site could probably be found which would disturb nothing archaeologically, and actually both could have 5000 acre plots which included few sites. However, the east side of the valley tends to have more land which is void of quantities of cultural material than does the west.

McMullen Valley

As in the Hassayampa Valley, both prime areas in McMullen Valley are in basically the same environmental contexts, with the Harcuvar Mountains to the northwest and the Harquahalas to the southeast. Centennial Wash bisects the valley and the area on both sides is flat desert pavement all the way up to the mountains, broken only by intermittent washes.

The main difference between the two is not a natural one, but rather a man-made one. The south prime area is transected by both a major highway and a railroad, which date to the early part of the present century. The northern area, on the other hand, is separated from both of these by several miles and a sometimes impassable wash. While this does not have any effect on the prehistoric activities in the valley, it does weigh heavily on the historic settlement and activity patterns.

In the north prime area, only a small area immediately at the base of the

mountains (T6N R13W Sec. 3 and 20) is given a high rating. The area just in from the mountains (T6N R13W Sec. 2 and 10; T7N R13W Sec. 35 and 36; T7N R12W Sec. 11,12,14,15,21,22,28,29,30 and 31; T7N R11W Sec. 5 and 7) is rated medium and the rest of the north area (T7N R11W, T7N R12W, T7N R13W, T6N R12W, and T6N R13W) is classed as having low potential. In the south prime area, one site was found (MV 1) just above Centennial Wash. It is a large historic site dating back to the 1880's or 1890's, and covering an area of approximately one acre. The land around this site and all along the south side of the wash (T7N R11W Sec. 33,34, and 35; T6N R11W Sec. 4,5.6 and 7; T6N R12W, Sec. 12,13 and 14) is given high potential. The area on either side of the railroad (T6N R12W Sec. 13,22,23,24 and 27; T6N R11W Sec. 1,2,3, 8,9,10,11,16,17,18 and 19; T6N R10W Sec. 5 and 6; T7N R10W Sec. 32 and 33) and the area which includes the northern foothills of the Harquahalas (T6N R11W Sec. 27, 28,32 and 33) are also rated high. The land just below the foothills (T5N R12W Sec. 1, 10,11 and 12; T5N R11W Sec. 6; T6N R11W Sec. 13,22,23,24,27,28,29,31 and 32) is ranked medium, and the rest of the south prime area (T6N R12W, T6N R11W, T6N R10W, T5N R11W and T5N R10W) is deemed low in possibilities. In considering both the north and south sides of McMullen Valley, the construction of a plant and associated facilities would probably disturb fewer archaeological resources, especially historical ones, on the north than it would on the south. However, places could probably be found on both sides where the plant could be built and destroy nothing, and where the surrounding 5000 acres would contain a relatively low number of prehistoric or historic sites.

SIGNIFICANCE OF THE SURVEY FINDINGS

Within the scope of this study, it is possible to present a probable ranking of

the six prime areas being considered, on the basis of their comparative archaeological resource potentials. The area that would be likely to contain the fewest cultural sites of any kind is the east side of Hassayampa Valley, followed by the northern area of McMullen Valley, then the west part of the Hassayampa, the southern area in Rainbow Valley, the south prime area in McMullen and finally, the northern area of Rainbow Valley. This survey has demonstrated that the site density in almost all areas is relatively low with those exceptions previously mentioned, and there are likely to be locations within at least five of the prime areas where a 5 to 10 acre plant could be placed without affecting the archaeological resources. However, the probability is much lower that a 5000 acre tract could be found which would not include sites of some kind, and the mere inclusion of sites within this tract would be enough to affect the resource base for the area in general. Just what this effect would be could not be determined without additional information based on further research and field work.

ALTERNATIVES FOR FUTURE WORK

With the decision to proceed with the process of site selection, and with the narrowing of possible locations, several alternatives are available for the second phase of archaeological and cultural survey. These alternatives vary with respect to such things as time, cost, extent, and amount of information to be obtained from them. The final choice is primarily up to the sponsor, NUS Corporation, depending on the degree of reliability desired from the second step in surveying. Eventually, in complying with the requirements of the NEPA-69, a complete inventory of all the sites of all kinds will have to be compiled for the entire section of land involved in the Nuclear Power Plant Project. (In considering all the alternative surveys, cost

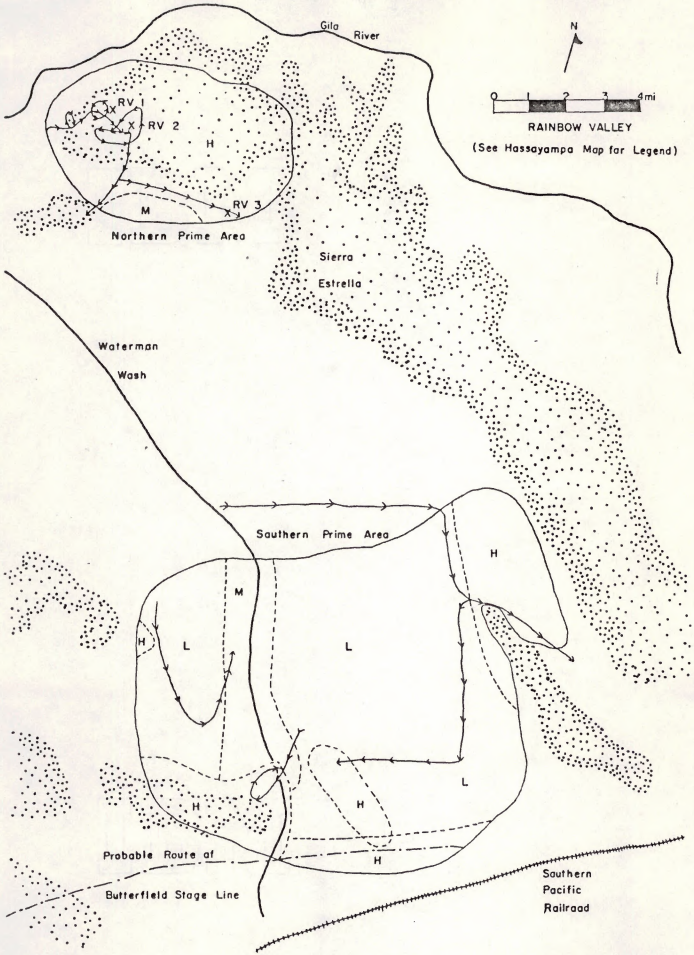
and time factors of approximately $1.00 per acre and around 60 gross acres for each working man day, or 11 working man days per gross sq. mi. in the field and twice that amount of time in the lab can be used to make necessary estimates.) The first alternative, the most comprehensive one, would be to conduct a complete intensive survey covering all the land within each of the remaining possible areas. This alternative would be tenable from a time and manpower point of view only if the possibilities were narrowed down to several specific 5000 acre plots. It would be the final survey needed, providing a complete inventory of all sites that could conceivably be affected by the project, unless some activity, such as the construction of a road, went on outside the 5000 acre limit. It would supply the data needed to make the final decisions on site selection, actual plant location, well locations, and any other necessary actions.

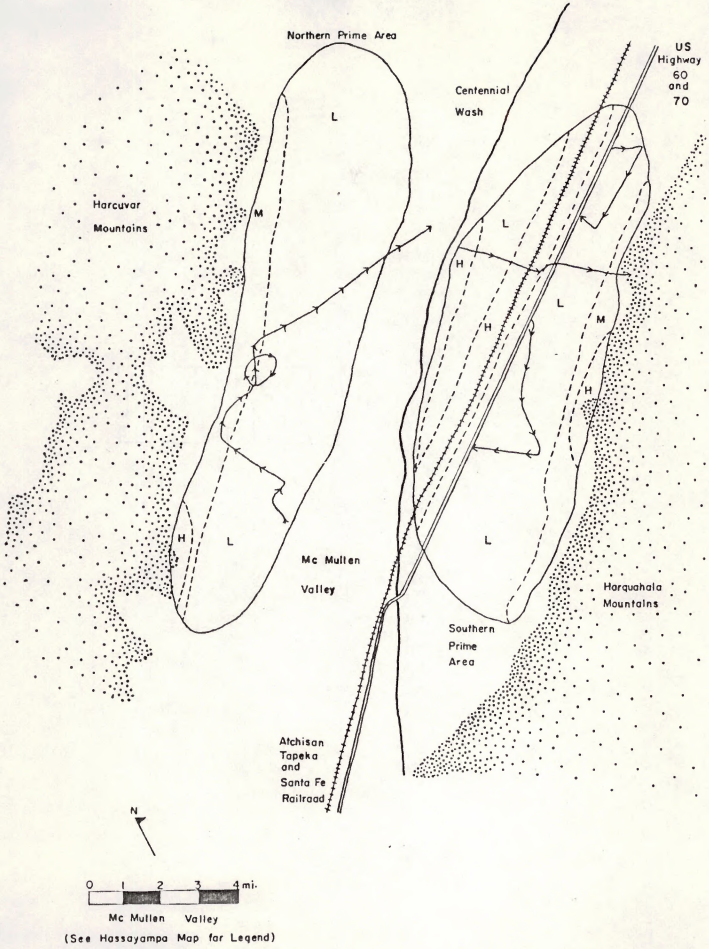
The second alternative for a Phase II survey operation would be an intense reconnaissance of a stratified sample section of each of the areas under consideration. This would consist of a series of transects which when added together would make up a representative sample of the land being surveyed. The size of this sample would depend on the size of the areas, and on the degree of accuracy desired from the survey. If a high degree of accuracy (above 90%) is to be achieved in predicting the actual frequency of sites in a given area, then a sample size of 5 to 50 per cent must be used, again depending on area size. If prime areas are to be re-examined more closely, then a 5 to 10 per cent sample should be adequate, but if 5000 acre tracts are to be studied, then because of the generally low density of sites in the area, a sample of 25 to 50 per cent would have to be carried out. If a lesser degree of accuracy is desired, then smaller samples can be surveyed with results similar

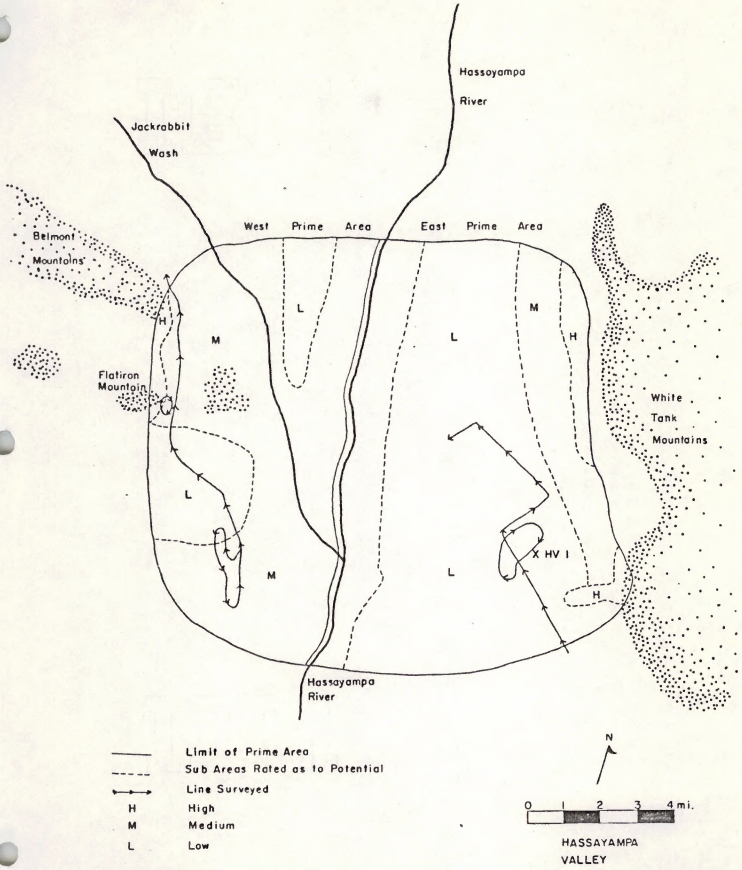
to those presented in this study, but somewhat more refined and accurate. If any kind of sample survey is conducted, regardless of accuracy, at least one more survey would have to be run, in order to cover the entire 5000 acre site finally selected.

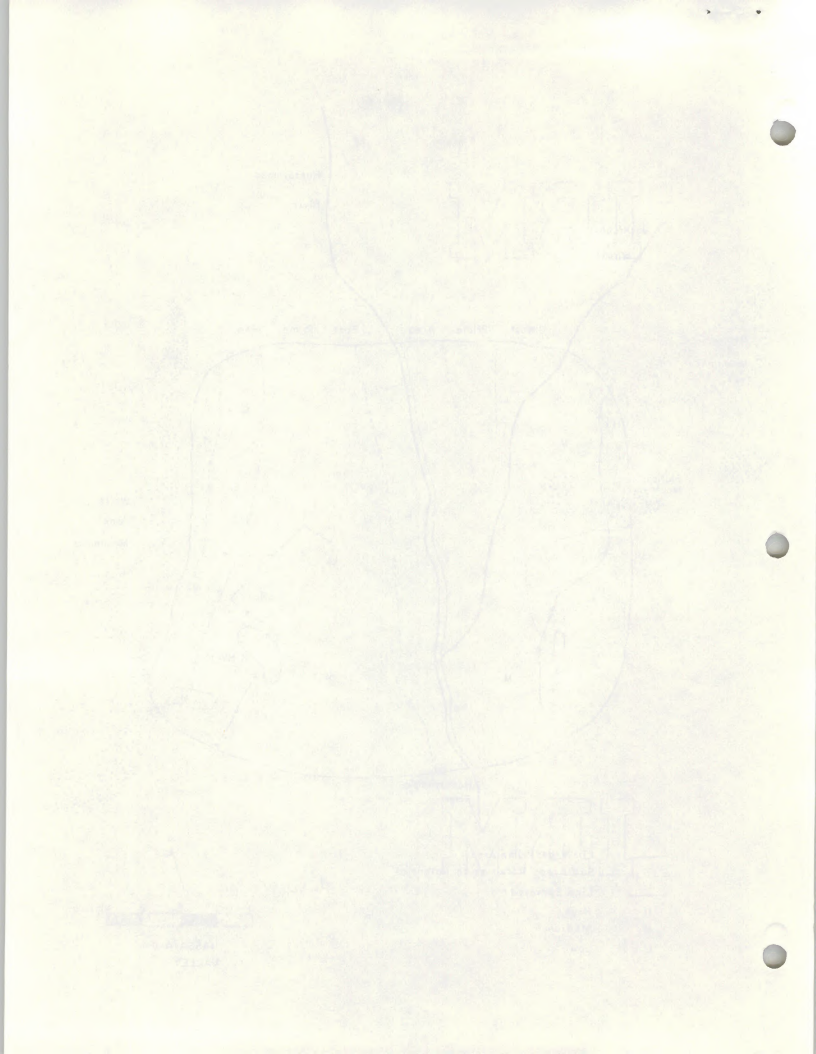
It is also conceivable that a combination of survey types could be conducted in this second phase. If, for example, one or two areas were under primary consideration, they could be completely surveyed, while one or two other areas under only secondary consideration could be sample surveyed. In other words, the second step of archaeological survey can be either the final phase or the second of three phases. It is a flexible stage, to be used by the sponsor to his best advantage in making more final decisions on site selection or plant location. It is also useful to the archaeologists involved in the project, because it can provide them with a much wider data base in which to make decisions when and if an excavation phase becomes necessary. It is conceivable that even though there is a low site density in the areas under present consideration, some sites might have to be excavated due to unavoidable circumstances. If this should become the case, then all possible information would be used to formulate a comprehensive research design under which the excavations could be carried out, with the second survey providing much of that information. In order to provide this information, Phase II (and Phase III if there is one) cannot be conducted in a research void. Its primary purpose is not just to find and plot the distribution of archaeological sites in an area. Rather, it must provide insight into certain questions: What will the overall impact of the project be on the total cultural resources of the larger region involved (i.e., the lower Gila River drainage or even west central Arizona)? What will be the general

problem orientation for any excavations necessary? and more specifically, What is the general culture history of the area being studied and what are the settlement patterns present? Though no survey, no matter how intense, can answer these questions in their entirety, an insight into them is of immense help when trying to interpret the cultural heritage of a region.


Gila River
N
0 1 2 3 4mi
RAINBOW VALLEY
(See Hassayampa Map for Legend)
RV 1
RV 2
RV 3
H
M
Northern Prime Area
Sierra
Estrella
Waterman
Wash
Southern Prime Area
H
M
L
L
H
L
H
H
H
Probable Route of
Butterfield Stage Line
Southern
Pacific
Railroad


Northern Prime Area
US Highway 60 and 70
Centennial Wash
Harcuvar Mountains
L
M
H
L
H
L
M
H
L
H
L
Mc Mullen Valley
Harquahala Mountains
Southern Prime Area
Atchison Tapeka and Santa Fe Railroad
N
0 1 2 3 4 mi.
Mc Mullen Valley
(See Hassayampa Map for Legend)


Hassoyampa
River
Jackrabbit
Wash
West Prime Area
East Prime Area
Belmont
Mountains
Flatiron
Mountain
White
Tank
Mountains
H
M
L
L
M
H
L
M
L
X HV 1
H
Hassayampa
River
Limit of Prime Area
Sub Areas Rated as to Potential
Line Surveyed
H High
M Medium
L Low
N
0 1 2 3 4 mi.
HASSAYAMPA
VALLEY



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MUSEUM OF NORTHERN ARIZONA
NUS CORPORATION
HASSAYAMPA, RAINBOW AND MCMULLEN VALLEYS

Preliminary Statement

The Museum of Northern Arizona conducted for the NUS Corporation the first phase of an archaeological clearance investigation in Hassayampa, Rainbow and McMullen valleys to aid in making a site selection for a proposed nuclear power plant. The research consisted of two parts: a library search of ethnographic and archaeological literature and files, and a four-day reconnaissance in the field of the prime areas under consideration. The library research found the three areas to have been occupied at one time or another by Hohokam and Desert culture peoples prehistorically, and by Yavapais, Pimas, Maricopas and Anglos in more recent times. Eight sites have been found previously in the areas studied, all of which were Hohokam, and all in the northern prime area of Rainbow Valley.

The field reconnaissance consisted of surveying a transect of each of the prime areas. It served to provide an idea about the respective potentials of each of the areas. From this opinion, the areas were ranked as to their relative archaeological resource potential. Five sites were found on this reconnaissance, three in Rainbow Valley, and one each in McMullen and Hassayampa valleys. The area thought to contain the fewest sites was the east side of Hassayampa, followed by the north side of McMullen, then the west part of Hassayampa, the south of Rainbow, the south of McMullen, and finally the north area of Rainbow. The northern prime area of Rainbow Valley is the only one which might contain a density of

sites high enough to preclude the building of a 5 to 10 acre plant without destroying a site of some kind. The significance of any of the sites in any of the areas cannot be determined without much more extensive research. As part of this study, alternatives are given for further research, including intensive survey, sample survey and combinations of both.

A. J. Lindsay, Jr.
October 16, 1972

MUSEUM OF NORTHERN ARIZONA
DEPARTMENT OF ANTHROPOLOGY
1972

MUSEUM OF NORTHERN ARIZONA
DEPARTMENT OF ANTHROPOLOGY

ARCHAEOLOGICAL CLEARANCE INVESTIGATION

TUCSON GAS AND ELECTRIC COMPANY

SAN JUAN-VAIL TRANSMISSION LINE RIGHT-OF-WAY

NEW MEXICO - ARIZONA

Interim Report

for the

Archaeological Survey of Reactor Site A, South of P.I.#25,

in Section 16, T.65, R.31E to Section 15, T.55, R.31E

345 KV San Juan-Vail Transmission Line

Bureau of Land Management and Arizona State Lands

Greenlee County, Arizona

Prepared by:

Allen E. Kane
Archaeologist

Submitted by:

Alexander J. Lindsay, Jr.
Coordinator of Archaeological Research

December 5, 1972

1972

ABSTRACT: The interim report presents results of work conducted on an archaeological survey by the Museum of Northern Arizona for the Tucson Gas and Electric Company power transmission substation or reactor site. An appendix lists the archaeological sites recorded, their location, description, and recommended action to be taken on each site.

INTRODUCTION

During the period July 24 through 28, Museum of Northern Arizona archaeologists Allen E. Kane and Steven Fuller conducted an archaeological survey for the Tucson Gas and Electric Company, The survey was made on Bureau of Land Management and Arizona State land east and north of the small village of York, Arizona. The Tucson Gas and Electric Company had made preliminary plans to place a reactor or substation in the area along the right-of-way for their 345 KV transmission line. In all, a total of eight land sections were examined by the archaeologists. Two prehistoric sites were discovered and recorded.

APPRAISAL AND ENVIRONMENTAL IMPACT

The first site recorded, NAll,470, is situated on the northern lower terrace of Lop Ear Creek, and consists of a surface scatter of worked lithic materials. The site is in poor condition because of surface erosion and stock trampling. The site is unusual in that no pottery or architectural structures were observed, perhaps indicating an early, possibly prepottery, occupation. As this site and the petroglyph site, NAll,471, are the only sites in the immediate area, they provide the only information on prehistoric inhabitants. NAll,470 is in such poor condition that it is advisable to thoroughly examine the soon as possible. Any construction activity close to or on the site would hasten deterioration. It is therefore recommended

that a controlled pickup of remaining artifacts be made as the best solution to fulfill environmental and archaeological requirements.

NA11,471 is located approximately 200 mi. downstream from NA11,470, and consists of a rock face containing many petroglyph panels, and a section of bedrock containing mortar holes. The petroglyphs are in fair condition and not defaced, hence offering a fine opportunity for future study. The lack of any permanent, pottery-containing habitation sites in the area leads to the conclusion that the petroglyphs were made by early nomadic peoples, thus rendering to the site an even greater importance. Construction crews and machinery must be kept away from the site to avoid deliberate vandalizing or machine damage to the petroglyph panels. It is therefore recommended that the site be flagged and surrounded by a fence to prevent damage.

MISCELLANEOUS UNRECORDED REMAINS

The surveyed area contains many check dams, diversion dams, and water catchments, apparently constructed by the Civilian Conservation Corps in the 1930's.

The check dams are found on top of the many alluvial mesas in the area. They are constructed of local rocks and boulders, and extend across the mesas in long lines. The lines are curved so that the middle is generally 20 to 30 m. west or downhill along the long axis of the mesa. There are generally 7 to 10 check dams on a 1000 m. long mesa, the dams being 100 to 200 m. apart.

The diversion dams are found along the water courses in the arroyos or canyons of the area. They are in the form of wing walls, and extend from the canyon wall 8 to 14 m. into the canyon, generally perpendicular to the canyon wall. They

are composed of local stone piled into walls averaging 1.5 m. high and 2.0 m. thick. Their purpose is to channel the stream flow back into the center of the canyon so as to prevent erosion of the canyon walls.

The water catchments are of two types: a small, manually-dug type, and a larger, machine-made variety. The most numerous are the small, "pothole" catchments. These are shallow, basin-like holes 3 to 5 m. in diameter, the fill from which has been piled downhill to form a low dam. These catchments are found on the mesa tops, a 1000 m. long mesa typically exhibiting 50 or more. The majority of the catchments are located near the edge of the mesa, but no definite pattern, or pattern relation with the check dams, could be discerned. The second type of catchment is much larger (15 to 30 m. in diameter) and machine-constructed. These are much fewer in number, one, if any, on each mesa, and also confined to the mesa tops. A bulldozer or other machine has been used to scoop out a basin, and the fill piled downhill to form an earthen dam. The dams are built across a minor tributary, and check dams have been constructed to funnel the water into the catchments.

RECOMMENDATIONS

Sections cleared for construction and locations of sites in the land sections surveyed are listed in Appendix I. Appendix II gives the archaeological sites recorded, their location, a brief description, and a recommendation for action.

TUCSON GAS AND ELECTRIC COMPANY
REACTOR SITE A
BUREAU OF LAND MANAGEMENT AND ARIZONA STATE LANDS
GREENLEE COUNTY, ARIZONA

APPENDIX I

Site	Recommendations
T.65, R31E, Sect. 16	Recommended for clearance
T.65, R.31E, Sect. 10 Portion west of centerline	Recommended for clearance
T.65, R.31E, Sect. 9	Recommended for clearance
T.65, R.31E, Sect. 4	Recommended for clearance
T.65, R.31E, Sect. 3 Portion west of centerline	Recommended for clearance
T.55, R.31E., Sect. 33	Recommended for clearance
T.55, R.31E, Sect. 32 Portion east of Bar Canyon	Recommended for clearance
T.55, R.31E, Sect. 28	Recommended for clearance
T.55, R.31E, Sect. 21	Recommended for clearance
T.55, R.31E, Sect. 15	Not recommended for clearance NA11,470; NA11,471

Clearance for construction is recommended for those sections free of sites, as indicated above. Clearance is not recommended for sections containing sites. These are described further in Appendix II.

TUCSON GAS AND ELECTRIC COMPANY
REACTOR SITE A
BUREAU OF LAND MANAGEMENT AND ARIZONA STATE LANDS
GREENLEE COUNTY, ARIZONA

APPENDIX II

Inventory, location, description, recommendation, and course of action taken by TG&E for sites situated in the area designated for the reactor.

SITE: NA11,470; Arizona W:16:1 (MNA); TG&E-ANF-1

LOCATION: NW¼. SE¼, Section 15, T.55, R.31E

DATE: Prehistoric (possibly Cochise)

DESCRIPTION: NA11,470 is a dispersed lithic scatter on the top of a stream terrace to the north side of Lop Ear Creek. The extent of worked stone materials is an area 40 m. in diameter. There is no evidence of architectural features, either surface or subterranean. The site is approximately 250 m. upstream from a petroglyph site, NA11,471. The lack of pottery sherds and permanent habitation structures indicate that this site was probably a prehistoric chipping station or work area, possibly pre-ceramic. The site has been badly eroded by water action, and a cement stock trough has also been placed on the site, causing further damage by cattle.

RECOMMENDATION: Most of the site has been destroyed by erosion. Therefore, a controlled pick-up of remaining artifacts before the site is completely destroyed is recommended.

ACTION BY TG&E: Recover remaining artifacts if construction activities warrant this type of protection; otherwise, we will avoid.

SITE: NA11,470; Arizona W:16:2 (MNA); TG&E-ANF-2

LOCATION: NW¼ of SE¼, Section 15, T.53, R.31E

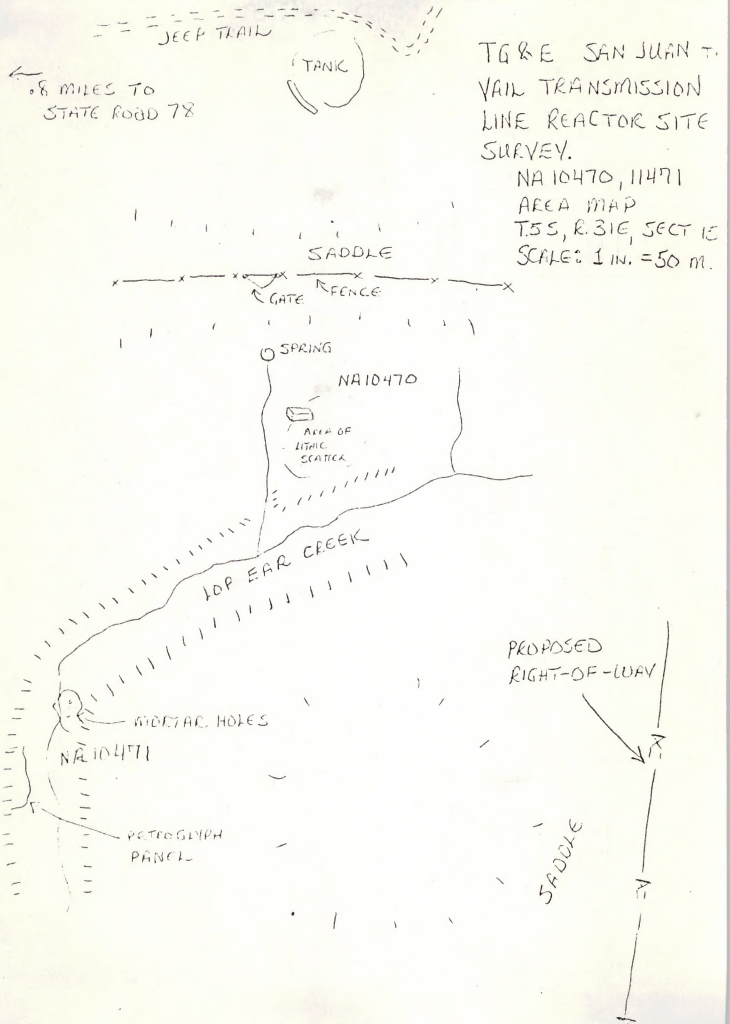
DATE: Prehistoric

DESCRIPTION: NA11,471 is a petroglyph site with a group of mortar holes ground into an outcrop of bedrock occurring in the stream bed 50 m. upstream. The petroglyphs are carved on a vertical section of bedrock forming the western wall of Lop Ear Canyon. The portion of outcrop containing petroglyphs is 14 m. long, exhibiting anthropomorphic, zoomorphic, and geometric figures. The figures have become somewhat indistinct through time, but remain in fair, pristine condition. There was no evidence of vandalism.

The mortar holes have been ground into a horizontal expanse of whitish bedrock in the bottom of the dry stream bed of Lop Ear Creek, approximately 50 m. upstream from the petroglyph site. The holes are conical, varying in size from 10 to 15 cm. in diamter, and 5 to 10 cm. deep. Four of the holes form a quadrilateral pattern; these may be postholes for a temporary brush and pole shelter. The remainder are clustered to the north of these four.

RECOMMENDATION: The petroglyphs are a valuable document of the prehistoric past, and must be protected against vandalism and other destruction. Recommendation for the site is that it be flagged and protected, and if possible, fenced against intruders.

ACTION BY TG&E: Flag and protect.


JEEP TRAIL
TANK
.8 MILES TO
STATE ROAD 78
TG&E SAN JUAN T.
VAIL TRANSMISSION
LINE REACTOR SITE
SURVEY.
NA 10470, 11471
AREA MAP
T.5S, R.31E, SECT 15
SCALE: 1 IN. = 50 M.
SADDLE
GATE
FENCE
SPRING
NA10470
AREA OF
LITHIC
SCATTER
TOP EAR CREEK
PROPOSED
RIGHT-OF-WAY
MORTAR HOLES
NA 10471
PETROGLYPH
PANEL
SADDLE

ARIZONA
DEPARTMENT OF ANTHROPOLOGY
1972

MUSEUM OF NORTHERN ARIZONA
DEPARTMENT OF ANTHROPOLOGY

ARCHAEOLOGICAL CLEARANCE INVESTIGATION

ARIZONA PUBLIC SERVICE COMPANY

500 KV SOUTHERN TRANSMISSION SYSTEM

NAVAJO POWER PROJECT

CONSTRUCTION ROADS AND RIGHT-OF-WAY

STATION 2265+00 TO STATION 3509+76.7

STATE OF ARIZONA, BUREAU OF LAND MANAGEMENT, AND PRIVATE LAND

MARICOPA COUNTY, ARIZONA

Interim Report

for

Archaeological Clearance Investigations From

Right-of-Way Station 2265+00, the Intersect with Interstate 17,

To Right-of-Way Station 3509+76.7, Westwing Switching Yard

Prepared by:

Donald C. Fiero
Archaeologist

Submitted by:

Alexander J. Lindsay, Jr.
Coordinator of Archaeological Research

October 25, 1972

ARIZONA
DEPARTMENT OF ANTHROPOLOGY
1972

ABSTRACT: Archaeologists from the Museum of Northern Arizona have conducted investigations on the Arizona Public Service Company 500 KV Southern Transmission System - Navajo Power Project. The proposed right-of-way, existing switching yard and access road and associated Howard P. Foley Company's access and construction roads were investigated to provide recommendations for antiquity clearance. Two archaeological sites are being excavated to prevent their loss to the archaeological resources south of Perry Mesa. Archaeological survey has located four additional sites south of Interstate 17.

INTRODUCTION

The Museum of Northern Arizona has conducted archaeological excavations and survey to provide recommendations for antiquity clearance for the Arizona Public Service Company Southern Transmission System - Navajo Power Project, Westwing Switching Yard and access road (under construction) and the Howard P. Foley Company's access and construction roads.

The transect investigated is from the intersect of Interstate 17, Right-of-Way Station 2265+00 to Westwing Switching Yard, Right-of-Way Station 3509+76.7.

To date, two archaeological sites are being excavated south of Perry Mesa, and four additional sites have been located south of Interstate 17, whose exact locations are described in Appendix I of this interim report.

INVESTIGATIONS

Where applicable, the location of sites has been marked around the perimeter with blue and white flagging. All sites were assigned field numbers (APS 500 KV-STS-#), photographed, and surface collections taken from the sites. These collections are now

located at the Museum of Northern Arizona. The locations of the sites are recorded on the Arizona Public Service Company's Plan and Profile aerial maps.

RECOMMENDATIONS

Archaeological clearance is recommended for construction from Right-of-Way Station 2265+00 to Station 3509+76.7. Archaeological clearance is not recommended for locations of archaeological resources described within this report.

ARIZONA PUBLIC SERVICE COMPANY
500 KV SOUTHERN TRANSMISSION SYSTEM
NAVAJO POWER PROJECT

APPENDIX I

Site Locations and Transect Sections Cleared for Construction

Station	Sheet	Recommendations
2265+00 - 2375+50		Recommended for clearance
2375+50 - 2377+00	205E	Not recommended for clearance NAll,597
2377+00 - 3200+00		Recommended for clearance
3200+00 - 3202+00	219E	Not recommended for clearance NAll,588
3202+00 - 3210+00		Recommended for clearance
3210+00 - 3214+00	219E	Not recommended for clearance NAll,587
3214+00 - 3410+00		Recommended for clearance
3410+00 - 3420+00	223E	Not recommended for clearance NAll,589
3420+00 - 3509+76.7		Recommended for clearance

ARIZONA PUBLIC SERVICE COMPANY
500 KV SOUTHERN TRANSMISSION SYSTEM
NAVAJO POWER PROJECT

APPENDIX II

Concordance of Site Numbers with Station Locations

Station	Sheet	Site Number
2375+50 - 2377+00	205E	NA11,597
3200+00 - 3202+00	219E	NA11,588
3210+00 - 3214+00	219E	NA11,587
3410+00 - 3420+00	223E	NA11,589

ARIZONA PUBLIC SERVICE COMPANY
500 KV SOUTHERN TRANSMISSION SYSTEM
NAVAJO POWER PROJECT

APPENDIX III

Site Description and Recommendations

NAll,597 Ariz. T:4:1(MNA) APS 500 KV-STS-72

STATION: 2375+50 - 2377+00 (Sheet 205E)

DEVELOPMENT: Unknown

DESCRIPTION: A surface sherd area 20 m. in diameter.

RECOMMENDATION: Flag and protect; keep heavy equipment beyond flagged area.

NAll,588 Ariz. T:3:2(MNA) APS 500 KV-STS-76

STATION: 3200+00 - 3202+00 (Sheet 219E)

DEVELOPMENT: Unknown

DESCRIPTION: A sherd and lithic area 50 m. in diameter

RECOMMENDATION: Flag and protect; keep heavy equipment beyond flagged area. Complete excavation of all structures and trash within the right-of-way where necessary for their protection.

NAll,587 Ariz. T:3:1(MNA) APS 500 KV-STS-75

STATION: 3210+00 - 3214+00 (Sheet 219E)

DEVELOPMENT: Unknown

DESCRIPTION: A sherd and lithic area 20 m. in diameter

RECOMMENDATION: Flag and protect; keep heavy equipment beyond flagged area.

APPENDIX III (cont'd)

NAll,589 Ariz. T:7:1(MNA) APS 500 KV-STS-77

STATION: 3410+00 - 3420+00 (Sheet 223E)

DEVELOPMENT: Unknown

DESCRIPTION: A widespread sherd area, 100 m. in diameter, with possible pit houses.

RECOMMENDATION: Flag and protect; keep heavy equipment beyond flagged area. Complete excavation of all structures and trash within the right-of-way where necessary for their protection.

DEPARTMENT OF ANTHROPOLOGY

1972

MUSEUM OF NORTHERN ARIZONA
DEPARTMENT OF ANTHROPOLOGY

ARIZONA PUBLIC SERVICE COMPANY
500 KV SOUTHERN TRANSMISSION SYSTEM
NAVAJO POWER PROJECT
CONSTRUCTION ROADS AND RIGHT-OF-WAY
STATION 1340+00 TO STATION 2265+00
STATE OF ARIZONA, BUREAU OF LAND MANAGEMENT AND PRIVATE LAND
YAVAPAI AND MARICOPA COUNTIES, ARIZONA

Interim Report

for

Archaeological Clearance Investigations From Right-of-Way Station 1340+00, the Agua Fria River, To Right-of-Way Station 2265+00, the Intersect with Interstate 17

Prepared by:

Donald C. Fiero
Salvage Archaeologist

Submitted by:

Alexander J. Lindsay, Jr.
Coordinator of Archaeological Research

September 18, 1972

ABSTRACT: Archaeologist's from the Museum of Northern Arizona have conducted investigations on the Arizona Public Service Company 500 KV Southern Transmission System - Navajo Power Project. The proposed right-of-way and associated Howard P. Foley Company's access and construction roads were investigated to provide recommendations for antiquity clearance. The transect considered by these studies was from approximately the intersect of the proposed right-of-way with the Agua Fria River, Station 1340+00 to the intersect with Interstate 17, Station 2265+00. Seven archaeological sites to date have been excavated or tested to prevent the loss of archaeological resources by construction damage. Archaeological survey has located four additional sites south of Perry Mesa.

INTRODUCTION

The Museum of Northern Arizona has conducted archaeological excavations and survey to provide recommendations for antiquity clearance for the Arizona Public Service Company 500 KV Southern Transmission System - Navajo Power Project and the associated Howard P. Foley Company's access and construction roads. The transect investigated is approximately from the intersect of the right-of-way with the Agua Fria River, Station 1340+00 to the intersect with Interstate 17, Station 2265+00. To date, seven small archaeological sites have been excavated or tested on Perry Mesa, and four more sites have been located south of the mesa, whose exact locations are described in Appendix I of this Interim Report.

INVESTIGATIONS

Where applicable, the location of sites has been marked around the perimeter with blue and white flagging. All sites were assigned field numbers (APS 500 KV-STS-#), photographed,

and surface collections taken from the sites. These collections are now located at the Museum of Northern Arizona. The locations of the sites are recorded on the Arizona Public Service Company's Plan and Profile aerial maps.

RECOMMENDATIONS

Archaeological clearance is recommended for construction from Right-of-Way Station 1695+59.40 to Station 2265+00. Archaeological clearance is not recommended for locations of sites described within this report.

ARIZONA PUBLIC SERVICE COMPANY
500 KV SOUTHERN TRANSMISSION SYSTEM
NAVAJO POWER PROJECT

APPENDIX I

Transect Sections Cleared for
Construction and Site Locations

Station	Sheet	Recommendations
1695+59.40 - 1734+00		Recommended for clearance
1734+00 - 1735+00	195E	Not recommended for clearance NA11,532
1735+00 - 1750+00		Recommended for clearance
1750+00 - 1752+00	195E	Not recommended for clearance NA11,533
1752+00 - 1783+00		Recommended for clearance
1783+00 - 1794+00	196E	Not recommended for clearance NA11,534
1794+00 - 1829+00		Recommended for clearance
1829+00 - 1834+00	196E	Not recommended for clearance NA11,535
1834+00 - 2265+00		Recommended for clearance

ARIZONA PUBLIC SERVICE COMPANY
500 KV SOUTHERN TRANSMISSION SYSTEM
NAVAJO POWER PROJECT

APPENDIX II

Concordance of Site Numbers with Station Locations

Station	Sheet	Site Number
1734+00 - 1735+00	195E	NA11,532
1750+00 - 1752+00	195E	NA11,533
1783+00 - 1794+00	196E	NA11,534
1829+00 - 1834+00	196E	NA11,535

ARIZONA PUBLIC SERVICE COMPANY
500 KV SOUTHERN TRANSMISSION SYSTEM
NAVAJO POWER PROJECT

APPENDIX II

Site Description and Recommendations

NA11,532 Ariz. N:16:59(MNA) APS 500 KV-STS-70

STATION: 1734+00 - 1735+00 (Sheet 195E)

DEVELOPMENT: Unknown

DESCRIPTION: A sherd area 30 m. in diameter

RECOMMENDATION: Collect and test the site.

NA11,533 Ariz. N:16:60(MNA) APS 500 KV-STS-74

STATION: 1750+00 - 1752+00 (Sheet 195E)

DEVELOPMENT: Unknown

DESCRIPTION: A sherd area 50 m. in diameter

RECOMMENDATION: Collect and test the site. Flag and protect, keep heavy equipment beyond flagged area.

NA11,534 Ariz. N:16:61(MNA) APS 500 KV-STS-71

STATION: 1783+00 - 1794+00 (Sheet 196E)

DEVELOPMENT: Unknown

DESCRIPTION: One room, several possible rooms, a sherd and lithic area approximately 130 m. by 75 m. containing a possible pithouse village.

RECOMMENDATION: Complete archaeological excavation of all structures and trash within the right-of-way. Flag and protect, keep heavy equipment beyond flagged area until excavations are complete.

NA11,535 Ariz. N:16:62(MNA) APS 500 KV-STS-73

DEVELOPMENT: Unknown

DESCRIPTION: A small village containing three rooms, two hearths, and several dividing walls and associated trash.

RECOMMENDATION: Complete archæeological excavation of all structures and trash within the right-of-way. Flag and protect, keep heavy equipment beyond flagged area until excavations are complete.

DEPARTMENT OF ANTHROPOLOGY
1979

MUSEUM OF NORTHERN ARIZONA
DEPARTMENT OF ANTHROPOLOGY

ARCHAEOLOGICAL CLEARANCE INVESTIGATION

CITY OF LOS ANGELES DEPARTMENT OF WATER AND POWER

WESTERN TRANSMISSION SYSTEM

NAVAJO-MCCULLOUGH TRANSMISSION LINE RIGHT-OF-WAY

KANE COUNTY, UTAH AND COCONINO COUNTY, ARIZONA

NAVAJO INDIAN RESERVATION, LAND DISTRICT 1

GLEN CANYON NATIONAL RECREATION AREA

BUREAU OF RECLAMATION

BUREAU OF LAND MANAGEMENT, UTAH AND ARIZONA

Interim Report

for

Archaeological Survey of Right-of-Way

Stations 00+00 - 1566+50 (Cedar Mountain Division)

Stations 00+00 - 08+00 (Buckskin Division)

Prepared by:

Douglas R. Brown
Archaeologist

Submitted by:

Alexander J. Lindsay, Jr.
Coordinator of Archaeological Research

November 15, 1972

ARIZONA
DEPARTMENT OF ANTHROPOLOGY
1979

ABSTRACT: Museum of Northern Arizona archaeologists continued survey of the Navajo-McCullough Transmission Line Right-of-way on October 19-26 and November 4-6, 1972. The survey was of the 200 ft. wide right-of-way for the transmission line. Thirteen prehistoric archaeological sites were located during this survey. All but three of the sites were on Bureau of Land Management land. Single sites were situated on the Navajo Indian Reservation, the Glen Canyon National Recreation Area, and Utah State Land.

On October 19-26 and November 4-6, 1972, Museum of Northern Arizona archaeologists Brent W. Smith and Douglas R. Brown continued, on foot, the survey of the right-of-way of the Navajo-McCullough Transmission Line. The area surveyed was between Stations 00+00 and 1566+50 of the Cedar Mountain Division and Stations 00+00 and 08+00 of the Buckskin Division. Thirteen prehistoric archaeological sites were found within this survey area. The right-of-way from Tower 33 B-R to Tower 65, with the exception of the four sites listed below, is recommended for clearance.

RECOMMENDATIONS

Stations and Intervals Recommended for Clearance and Locations of Sites within the Surveyed Area

Station Number	Tower Number	Recommendations
00+00	1R Arizona, 1R through 73	Recommended for clearance
11+50	2R	Recommended for clearance
19+	3R	Recommended for clearance
25+61	4R	Recommended for clearance
36+40.95	5R	Recommended for clearance
55+20	6R	Recommended for clearance
70+20	7R	Not recommended for clearance NA11,607 LAWP-RW-33

Station Number	Tower Number	Recommendations
83+80	8R	Recommended for clearance
97+10	9R	Recommended for clearance
112+00	10R	Recommended for clearance
125+70	11R	Recommended for clearance
139+40	12R	Recommended for clearance
147+90	13R	Recommended for clearance
160+76.25	14R	Recommended for clearance
172+60	15R	Recommended for clearance
188+00	16R	Recommended for clearance
200+80	17R	Recommended for clearance
214+80	18R	Recommended for clearance
225+94	19R	Recommended for clearance
236+13.92	20R	Recommended for clearance
250+40	21R	Recommended for clearance
264+30	22R	Recommended for clearance
276+30	23R	Recommended for clearance
291+80	24R	Not recommended for clearance NA11,608 LAWP-RW-34
305+00	25R	Not recommended for clearance NA11,608 LAWP-RW-34
313+20.94	26R	Recommended for clearance
326+50	27R	Recommended for clearance
335+30	28R	Not recommended for clearance NA11,609 LAWP-RW-35
347+20.24	29R	Recommended for clearance

Station Number	Tower Number	Recommendations
252+21.07	30R	Recommended for clearance
367+10	31R	Recommended for clearance
379+00	32R	Recommended for clearance
387+78.33	33A-R	Recommended for clearance
408+80	33B-R	Recommended for clearance
422+80	33C-R	Recommended for clearance
421+55=438+34	33D-R	Recommended for clearance
439+10	34	Recommended for clearance
455+35	35	Recommended for clearance
465+50	36	Not recommended for clearance NA11,611 LAWP-RW-37
479+60	37	Recommended for clearance
491+55	38	Not recommended for clearance NA11,610 LAWP-RW-36
508+75	39	Not recommended for clearance NA11,610 LAWP-RW-36
519+75	40	Recommended for clearance
537+85	41	Not recommended for clearance NA11,612 LAWP-RW-38
553+25	42	Not recommended for clearance NA11,613 LAWP-RW-39
568+90	43	Not recommended for clearance NA11,613 LAWP-RW-39 Recommended for clearance NA11,614 LAWP-RW-40
583+85	44	Recommended for clearance NA11,614 LAWP-RW-40
600+05	45	Recommended for clearance

Station Number	Tower Number	Recommendations
616+65	46	Recommended for clearance
632+45	47	Recommended for clearance
648+50	48	Recommended for clearance
663+50	49	Recommended for clearance
678+15	50	Recommended for clearance
694+10	51	Recommended for clearance
709+15	52	Recommended for clearance
723+70	53	Recommended for clearance
739+30	54	Recommended for clearance
754+75	55	Recommended for clearance
769+80	56	Recommended for clearance
784+50	57	Recommended for clearance
796+80	58	Recommended for clearance
810+30	59	Recommended for clearance
823+25	60	Recommended for clearance
835+79.71	61	Recommended for clearance
850+35	62	Recommended for clearance
865+30	63	Recommended for clearance
877+40	64	Recommended for clearance
890+60	65	Recommended for clearance
906+80	66	Recommended for clearance
925+00	67	Recommended for clearance
938+68.74	68	Recommended for clearance

Station Number	Tower Number		Recommendations
949+85	69		Recommended for clearance
966+70	70		Not recommended for clearance NA11,615 LAWP-RW-41
977+60	71		Recommended for clearance
992+05	72		Recommended for clearance
1008+10	73	All above in Arizona	Recommended for clearance
1020+45	74	All below in Utah	Recommended for clearance
1033+80	75		Recommended for clearance
1046+40.34	76		Recommended for clearance
1053+70	77		Recommended for clearance
1073+65	78		Not recommended for clearance NA11,616 LAWP-RW-42
1085+90	79		Not recommended for clearance NA11,616 LAWP-RW-42 NA11,617 LAWP-RW-43
1100+55	80		Not recommended for clearance NA11,617 LAWP-RW-43
1113+70	81		Recommended for clearance NA11,618 LAWP-RW-44
1125+40	82		Recommended for clearance NA11,618 LAWP-RW-44
1138+90	83		Recommended for clearance
1154+75	84		Recommended for clearance
1169+75	85		Recommended for clearance
1184+60	86		Recommended for clearance
1199+30	87		Recommended for clearance

Station Number	Tower Number	Recommendations
1224+30	88	Not recommended for clearance NA11,619 LAWP-RW-45
1241+60	89	Not recommended for clearance NA11,619 LAWP-RW-45
1257+00	90	Recommended for clearance

CEDAR MOUNTAIN DIVISION

Station Number	Tower Number	Recommendations
1267+80	91	Recommended for clearance
1278+90	92	Recommended for clearance
1290+20	93	Recommended for clearance
1302+35	94	Recommended for clearance
1315+65	95	Recommended for clearance
1329+15	96	Recommended for clearance
1342+75	97	Recommended for clearance
1356+55	98	Recommended for clearance
1370+35	99	Recommended for clearance
1385+15	100	Recommended for clearance
1396+95	101	Recommended for clearance
1413+15	102	Recommended for clearance
1428+35	103	Recommended for clearance
1444+50	104	Recommended for clearance
1457+60	105	Recommended for clearance
1474+60	106	Recommended for clearance
1489+70	107	Recommended for clearance

Cedar Mountain Division (cont'd)

Station Number	Tower Number	Recommendations
1503+45	108	Recommended for clearance
1517+42.14	109	Recommended for clearance
1535+70	110	Recommended for clearance
1550+85	111	Recommended for clearance
1566+50	112	Recommended for clearance

BUCKSKIN DIVISION

00+00	200	Recommended for clearance
08+00	201	Recommended for clearance

Clearance for construction in the right-of-way is recommended for the stations indicated by the station numbers. Clearance is not recommended for stations that are designated above and listed in Appendix II as site locations.

LOS ANGELES WATER AND POWER PROJECT
NAVAJO-MCCULLOUGH TRANSMISSION LINE
ARCHAEOLOGICAL SURVEY OF RIGHT-OF-WAY

APPENDIX I

Index of Archaeological Survey Sites Located in Right-of-Way
Between Stations 00+00 and 1257+00, Cedar Mountain Division,
And Stations 00+00 and 08+00, Buckskin Division

Station Number	Tower Number	Site Number	Field Number	Recommendations
70+20	7R	NA11,607	LAWP-RW-33	Flag and protect Collect and excavate
83+80	8R	NA11,607	LAWP-RW-33	
	24R	NA11,608	LAWP-RW-34	Flag and protect Collect and excavate
	25R	NA11,608	LAWP-RW-34	
335+30	28R	NA11,609	LAWP-RW-35	Flag and protect Collect and excavate
465+50	36	NA11,611	LAWP-RW-37	Flag and protect Collect and excavate
491+55	38	NA11,610	LAWP-RW-36	Flag and protect Collect and excavate
508+75	39	NA11,610	LAWP-RW-36	
537+85	41	NA11,612	LAWP-RW-38	Flag and protect Collect and excavate
553+25	42	NA11,613	LAWP-RW-39	Flag and protect Collect and excavate
568+90	43	NA11,613 NA11,614	LAWP-RW-39 LAWP-RW-40	Flag and protect Collect and excavate
583+85	44	NA11,614	LAWP-RW-40	
966+70	70	NA11,615	LAWP-RW-41	Flag and protect Collect and excavate

APPENDIX I (cont'd)

1073+65	78	NA11,616	LAWP-RW-42	Flag and protect Collect and excavate
1085+90	79	NA11,616 NA11,617	LAWP-RW-42 LAWP-RW-43	Flag and protect Collect and excavate
1100+55	80	NA11,617	LAWP-RW-43	
1113+70	81	NA11,618	LAWP-RW-44	Flag and collect
1125+40	82	NA11,618	LAWP-RW-44	
1224+30	88	NA11,619	LAWP-RW-45	Flag and protect Collect and excavate
1241+60	89	NA11,619	LAWP-RW-45	

LOS ANGELES WATER AND POWER PROJECT
NAVAJO-MCCULLOUGH TRANSMISSION LINE
ARCHAEOLOGICAL SURVEY OF TOWER LINE RIGHT-OF-WAY

APPENDIX II

Inventory and Description for Sites Located in
The Staked Transmission Line Right-of-Way

NA11,607 LAWP-RW-33 (Land Status - NIR)

STATION: 70+20

TOWER: 7R

DATE: Pueblo I

DESCRIPTION: This is a small site located at a sandstone outcrop in a large sand dune area. It was probably a camp site about 75 m. by 75 m., and is situated about 80 ft. southeast of Tower 7R of the Navajo-McCullough Transmission Line on the Navajo Indian Reservation, Land District 1. Observed at this site were scattered chert flakes and pottery sherds. The sandstone outcrop offers protection from winds, but there are no rain shelters present. No hearths or structural remains were observed on the surface. Shifting sand has altered the present surface from that of prehistoric times.

RECOMMENDATION: This site needs to be mapped and systematically surface collected. Excavations should be conducted to determine the extent of buried habitational zones.

NA11,608 LAWP-RW-34 (Land Status - Bureau of Reclamation)

STATION:

TOWER: 24R-25R

DATE: Pueblo I-II

DESCRIPTION: This site is located at a sandstone outcrop in a large sand dune area. It is approximately 100 m. (North-South) by 50 m. (East-West), and possibly was used as a seasonal camp location. It is situated on the Navajo-McCullough Transmission Line right-of-way about 200 m. west of Tower 24R. Observed on the surface of this site were pressure and percussion flakes, worked flakes, black-on-white pottery and plain gray pottery. In the sandstone outcrops are several water pockets which hold water for a length of time after rains. Shifting sand has altered the present surface from that of the past. This site is in Arizona.

RECOMMENDATION: After being mapped and systematically surface collected, the site needs to be excavated in an effort to determine buried areas of occupation.

NA11,609 LAWP-RW-35 (Land Status - Bureau of Reclamation)

STATION: 335+30

TOWER: 28R

DATE: Not determined

DESCRIPTION: This is a small site located in sand dunes near a sandstone outcrop. It was probably a chipping area and camp site. The area is situated 100 ft. northwest of Tower 28R and is in the right-of-way of the Navajo-McCullough Transmission Line. Observed on the surface was a small concentration of flakes; no evidence of hearths or living structures was noted. There are water pockets in sandstone outcrops nearby for the holding of rain water. The present surface has been altered from that of the past by the shifting of the sand dunes. This

site is in Arizona.

RECOMMENDATION: Mapping and systematic surface collection are required here, as well as excavation.

NA11,610 LAWP-RW-36 (Land Status - BLM, Arizona Strip)

STATION: 491+55 - 508+75

TOWER: 38-39

DATE: Not determined

DESCRIPTION: This is a wind shelter site at the base of sandstone cliffs. The site covers an area of approximately 100 m. by 100 m., and is in sand dunes. Although no hearths or structures were noted by the survey team, the site should have buried debris; excavations are necessary to uncover such remains. Both chipped and ground stone were observed on the surface. The site is about 100 m. southeast of Tower 39, and in the Navajo-McCullough Transmission Line right-of-way. The sandstone cliffs above the site have numerous water pockets to catch rainfall and provide a temporary, seasonal water supply. This site is in Arizona.

RECOMMENDATION: Mapping and controlled collection are required here. Excavations are also necessary both in the sheltered area and in the area in front of the shelter.

NA11,611 LAWP-RW-37 (Land Status - Glen Canyon National Recreation Area)

STATION: 465+50

TOWER: 36

DATE: Not determined

DESCRIPTION: This is an open chipping and quarry site. The site is located on top of a sandstone hill which is covered with gravel cobbles of varying size. It was these cobbles that caused prehistoric activity at this site. Cores, flakes, unifaces, and bifaces were observed lying about the top and sides of this knoll. Tower 36 is located along the northern edge of the site. No hearths or structural remains were noted by the survey team, but future work at the site could uncover such remains. The area covered by the site is a circular area with a diameter of roughly 100 m., centered on the top of the knoll. This site is in the Glen Canyon National Recreation Area of Arizona.

RECOMMENDATION: The site needs to be mapped and systematically surface collected. Excavations can be utilized to determine any extent of habitation.

NA11,612 LAWP-RW-38 (Land Status - BLM, Arizona Strip)

STATION: 537+85

TOWER: 41

DATE: Not determined

DESCRIPTION: This site is a light lithic scatter situated at the top of sandstone cliffs along a canyon's edge. The site is at Tower 41 and extends northwest along the Navajo-McCullough Transmission Line for approximately 50 m. In the light lithic scatter both flakes and unifaces were observed. No habitational features were noted by the survey team, but future work could reveal evidence of this kind. Water pockets in the sandstone below the cliffs provide temporary

seasonal water and small gravel cobbles at the top of the cliffs provide natural chert for knapping. This site is in Arizona.

RECOMMENDATION: The site must first be mapped and collected in a controlled manner before excavations are conducted to determine the extent of occupation.

NA11,613 LAWP-RW-39 (Land Status - BLM, Arizona Strip)

STATION: 553+25 - 568+90

TOWER: 42-43

DATE: Not determined

DESCRIPTION: This site is a light lithic scatter. It is located in the Navajo-McCullough Transmission Line right-of-way approximately 100 m. east of Tower 43, and covers an area roughly 25 m. by 25 m. Observed at this location were pressure and percussion flakes, unifaces and bifaces. No evidence of habitation areas was noted by the survey team, although there is a possibility such areas have been covered by shifting sand. Small gravel is found frequently in the sand dunes around the site, and the nearest water lies in water pockets in the sandstone cliffs a half mile away. This site is in Arizona.

RECOMMENDATION: This site must be systematically collected and excavated.

NA11,614 LAWP-RW-40 (Land Status - BLM, Arizona Strip)

STATION: 568+90 - 583+85

TOWER: 43-44

DATE: Not determined

DESCRIPTION: This site is a light lithic scatter situated in sand dunes. It is

located in the Navajo-McCullough Transmission Line right-of-way approximately half way between Towers 43 and 44. Observed on the surface at this site were flakes and bifaces. No habitational features were noted by the survey team; however, there is a possibility any such features could be covered by migrating sand. Small gravel is available for limited knapping and water pockets can be found in sandstone cliffs three-quarters of a mile away. This site is in Arizona.

RECOMMENDATION: Collection of this site is all that is required.

NA11,615 LAWP-RW-41 (Land Status - BLM, Arizona Strip)

STATION: 966+70

TOWER: 70

DATE: Pueblo I-II

DESCRIPTION: This is a small dry shelter site in the side of a sandstone cliff. The site is on the edge of the Navajo-McCullough Transmission Line right-of-way being 120 ft. south of Tower 70. However, the shelter entrance is quite apparent from the transmission line, and any access road in the area of Tower 69. The site has been slightly damaged by vandals, and without protection will continue to be susceptible to vandal activities in the future. Evidence of such activity consisted of backdirt piles of spoil in the shelter and a screen for sieving dirt. The survey party found no pottery, hearths, or temporary structural remains in the area; however, chert flakes and biface fragments are present. Lithic debris is scattered for 200 ft. in front of the shelter opening. This site is in Arizona.

RECOMMENDATION: The shelter needs to be systematically collected, mapped,

and excavated, despite its slight off-right-of-way position.

NA11,616 LAWP-RW-42 (Land Status - BLM, Utah)

STATION: 1073+65 - 1085+90

TOWER: 78-79

DATE: Not determined

DESCRIPTION: This is a lithic scatter at the edge of a gully in a good location for a prehistoric camp area. The site is in the Navajo-McCullough Transmission Line right-of-way approximately 200 m. southeast of Tower 79. It is situated in a sandy area at the edge of a drainage gully which would carry seasonal runoff and has water pockets to hold a small portion of water for an extended period of time. The shifting sand has possibly covered any evidence of hearths or structure remnants, and excavation would provide more information on settlement patterns. Both pressure and percussion flakes were observed by the survey team. This site is in Utah.

RECOMMENDATION: The site needs controlled collection and excavation.

NA11,617 LAWP-RW-43 (Land Status - BLM, Utah)

STATION: 1085+90 - 1100+55

TOWER: 79-80

DATE: Not determined

DESCRIPTION: This site is located in a sandy area next to an erosional gully. The indication for the presence of a site are scattered lithics and also an ideal location for a small camp. The site is in the Navajo-McCullough Transmission

Lind right-of-way, and is situated 150 m. northwest of Tower 79. It covers an area roughly 25 m. (East-West) by 40 m. (North-South). No hearths or structural remains were seen by the survey team; however, the migrating sand has probably buried any evidence of such, and excavations are needed to determine what is present at the site. Observed on this location were both pressure and percussion flakes, unifaces, bifaces, and ground stone. In the gully are water pockets that would temporarily hold small amounts of water. This site is in Utah.

RECOMMENDATION: The site area needs controlled collection and excavation to determine occupation zones.

NA11,618 LAWP-RW-44 (Land Status - BLM, Utah)

STATION: 1113+70 - 1125+40

TOWER: 81-82

DATE: Not determined

DESCRIPTION: This is a light lithic scatter that covers a large area. The site extends from Tower 81 through Tower 82 along the Navajo-McCullough Transmission Line. The heaviest areas of concentration were noted at the crossing of an erosional gully at a location which would have served as a camp site. No hearths or structure remnants were noted in the site area. Observed on the surface were pressure and percussion flakes, unifaces, and bifaces. Frequent sand migrations have possibly covered areas used as a camp. Flakes were observed in an area of approximately 50 m. (North-South) by 400 m. (East-West). The gully the site crosses would carry seasonal runoff, and it has water pockets

to hold limited amounts of water. This site is in Utah.

RECOMMENDATION: Systematic collection and excavation recommended for this site.

NA11,619 LAWP-RW-45 (Land Status - BLM, Utah)

STATION: 1224+30 - 1241+60

TOWER: 88-89

DATE: Not determined

DESCRIPTION: This site is a small lithic scatter near the western edge of Judd Hollow. The site is located in sand dunes which are surrounded by sandstone cliffs. Seasonal runoff would be abundant and water pockets in nearby sandstone would hold water for extended periods. The site consists mostly of pressure flakes in an area roughly 20 m. by 20 m. No hearths or structure remnants were located. The flake concentration is about 100 m. southeast of Tower 89 on a small sandy rise that is in the Navajo-McCullough Transmission Line right-of-way. This site is located on Utah State lands.

RECOMMENDATION: This small site needs to be systematically collected and excavated.

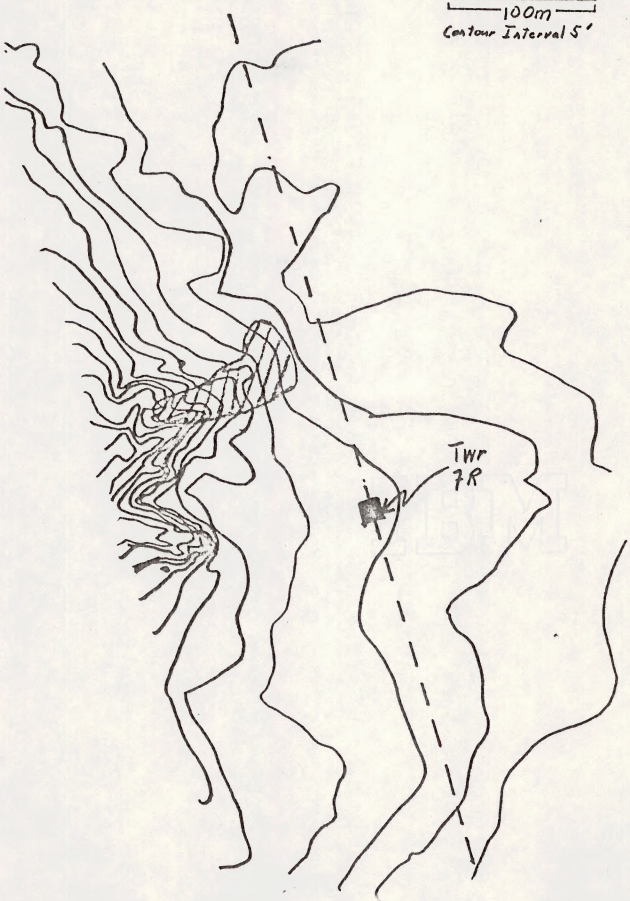
LOS ANGELES WATER AND POWER PROJECT

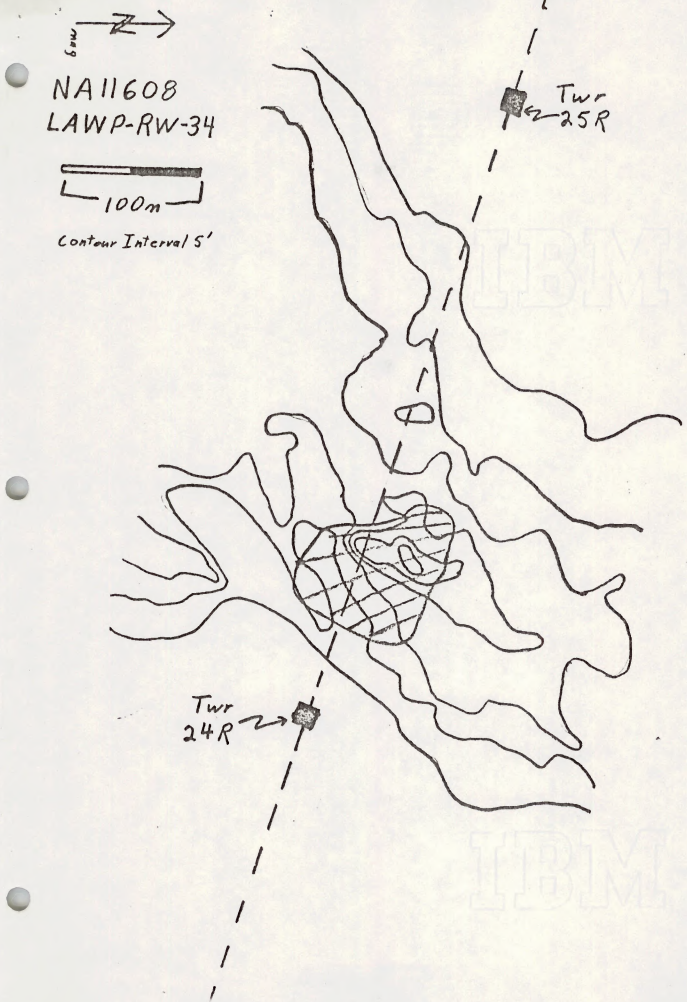
NAVAJO-MCCULLOUGH TRANSMISSION LINE

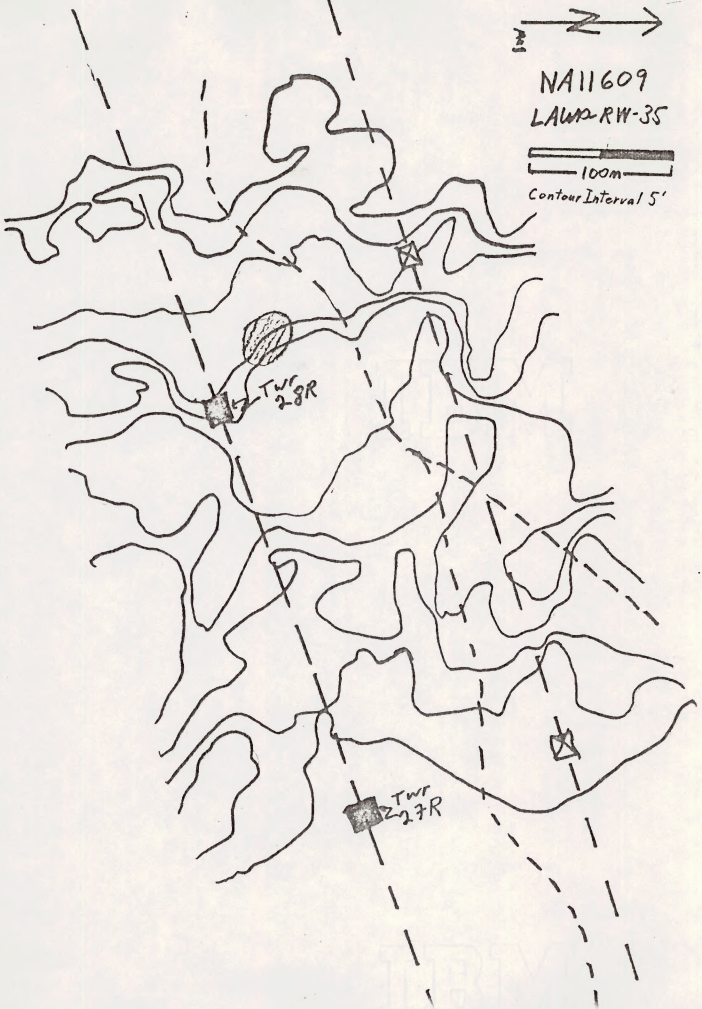
ARCHAEOLOGICAL SURVEY OF RIGHT-OF-WAY

Appendix III

Site Maps


N
NA11607
LAWP-RW-33
100m
Contour Interval 5'
Twr
7R


NAV
NA11608
LAWP-RW-34
100m
Contour Interval 5'
Twr
25R
Twr
24R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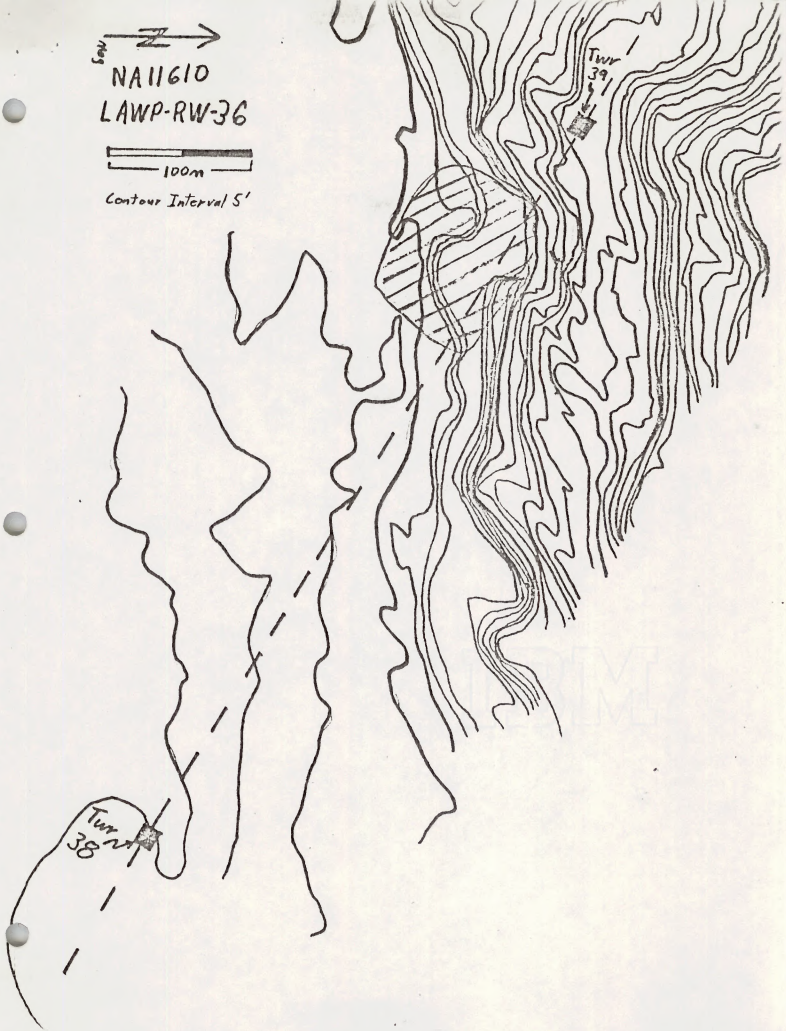
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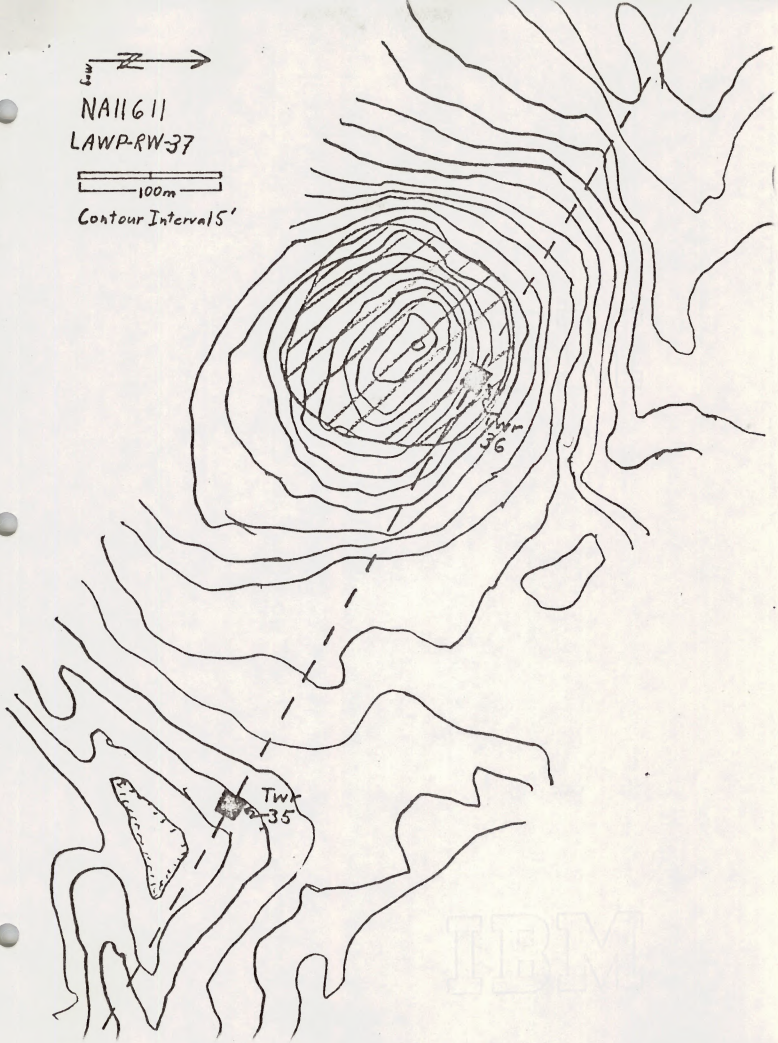
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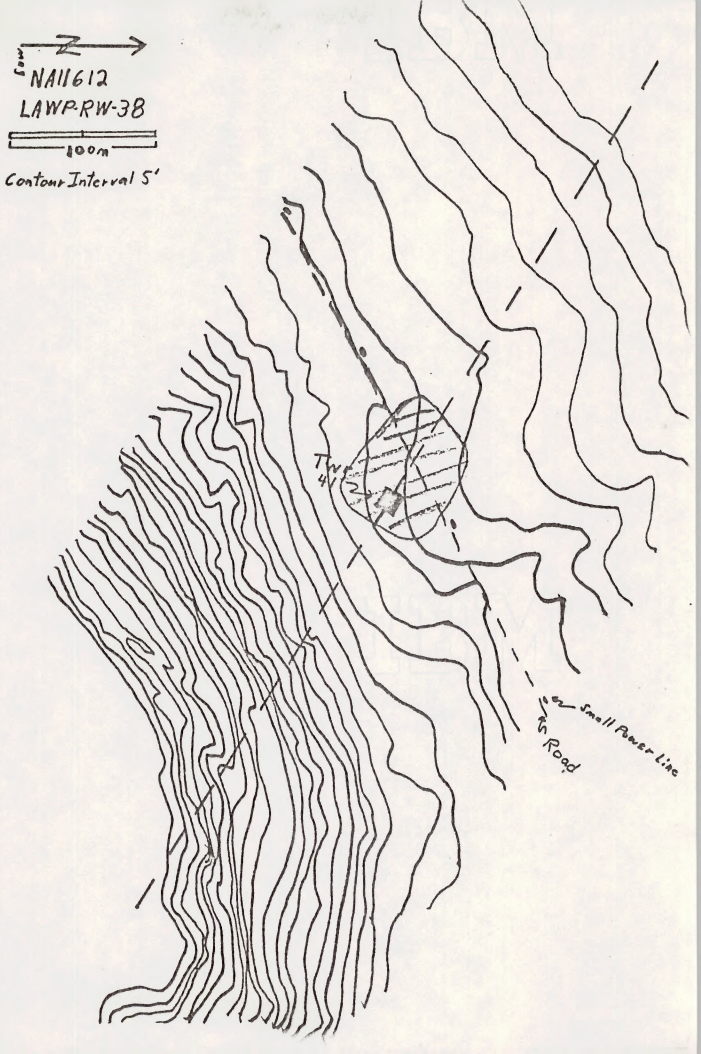
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100m
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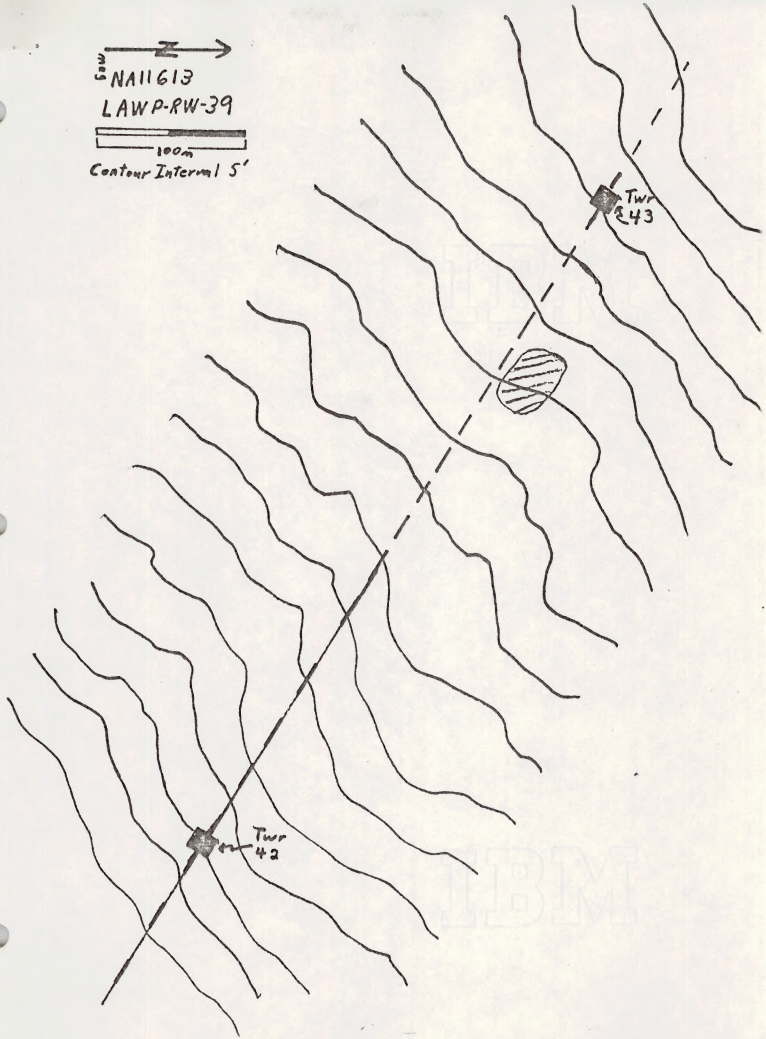
TWR
Small Power Line
To Road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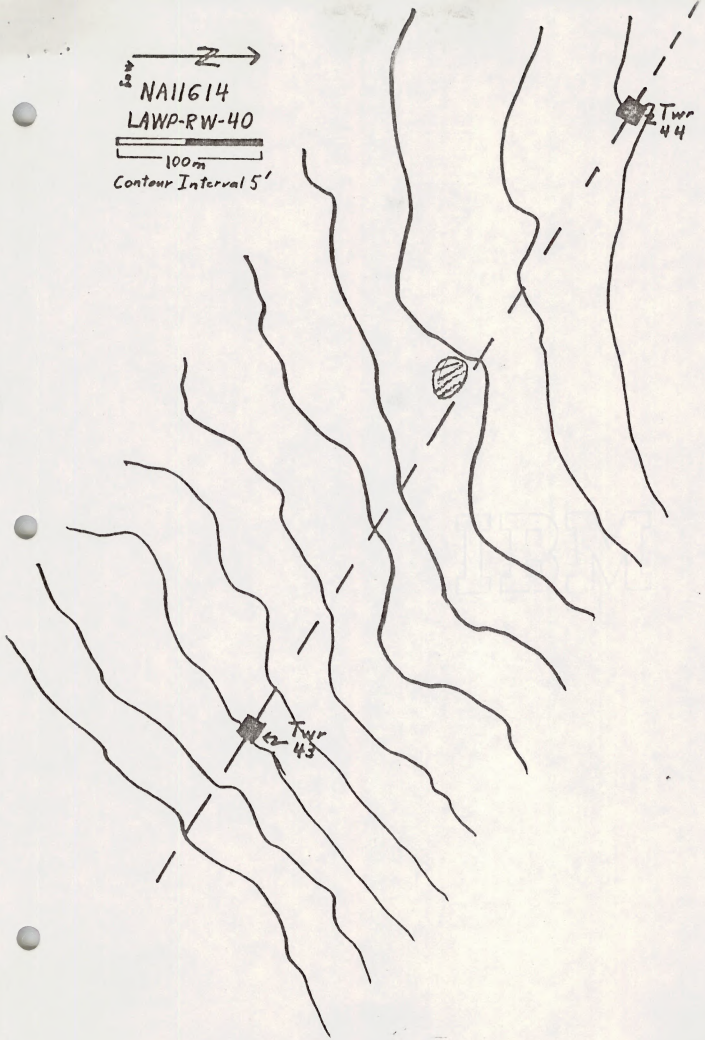
Twr 43
Twr 42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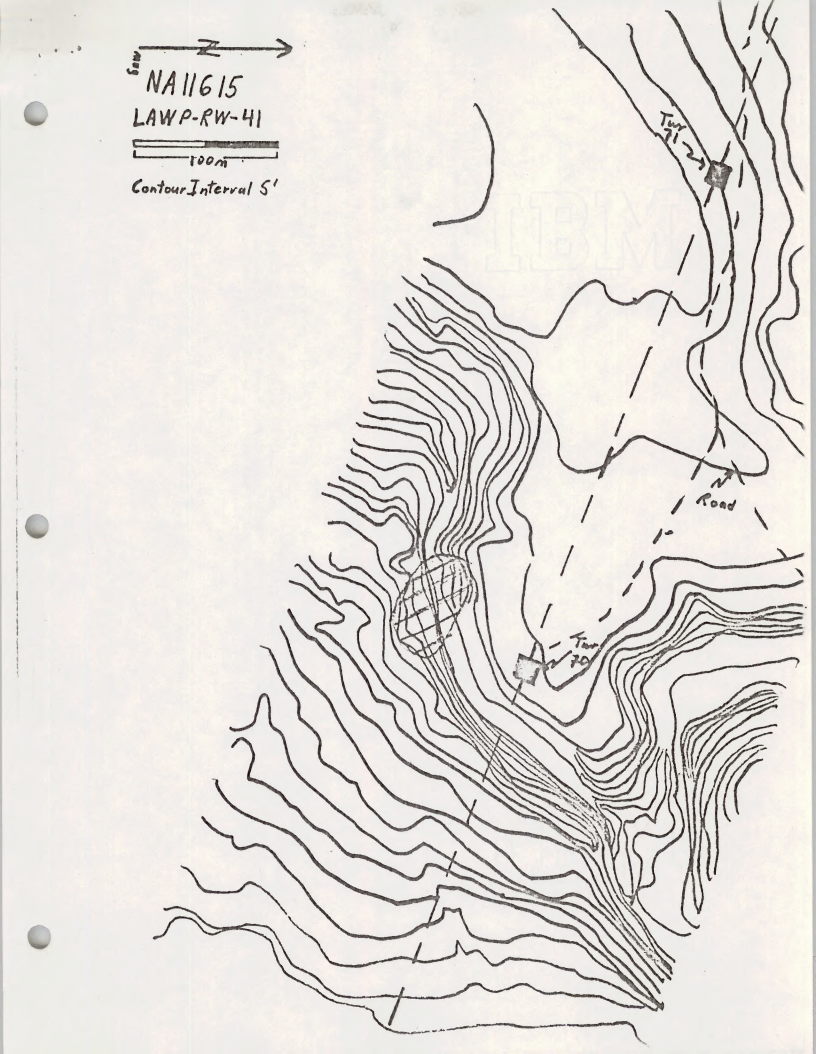
Twr 44
Twr 43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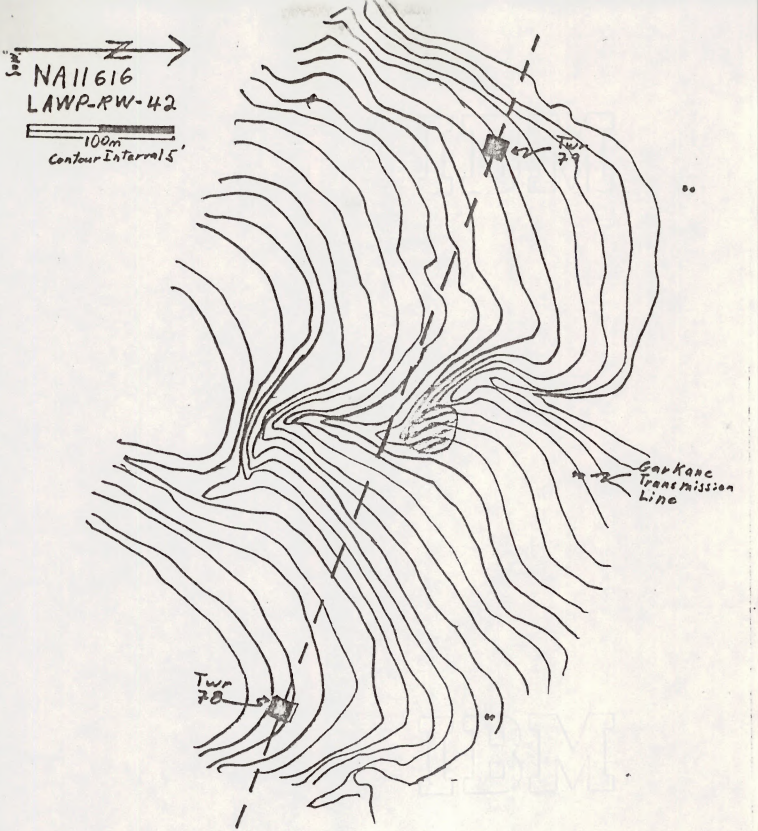
Road
Trail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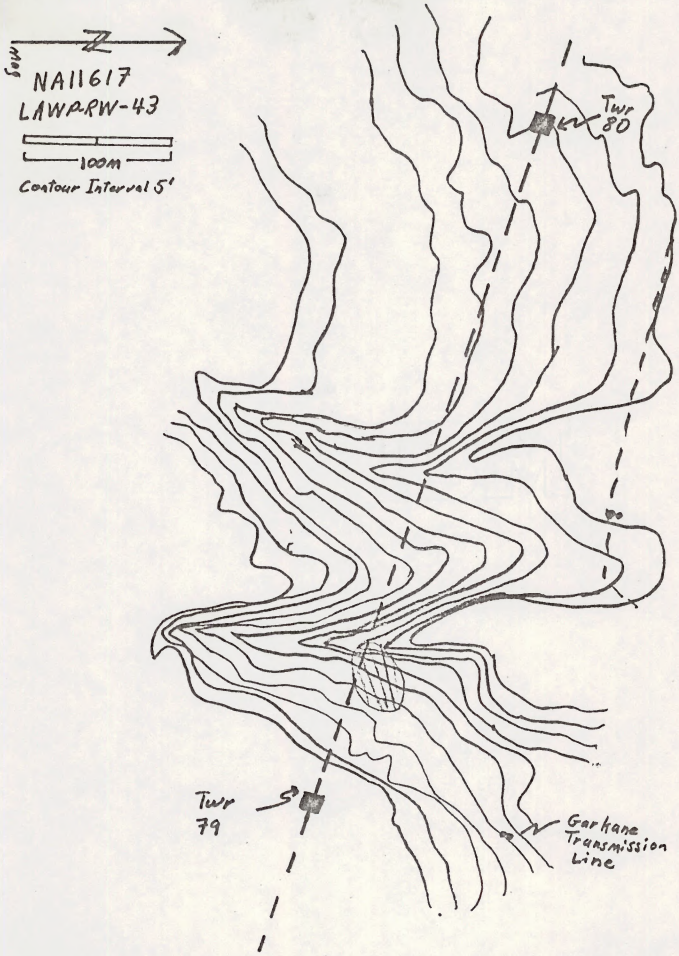
Contour Intervals
Twr
79
Twr
78
Gar Kane
Transmission
Line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Contour Interval 5'
Twr 80
Twr 79
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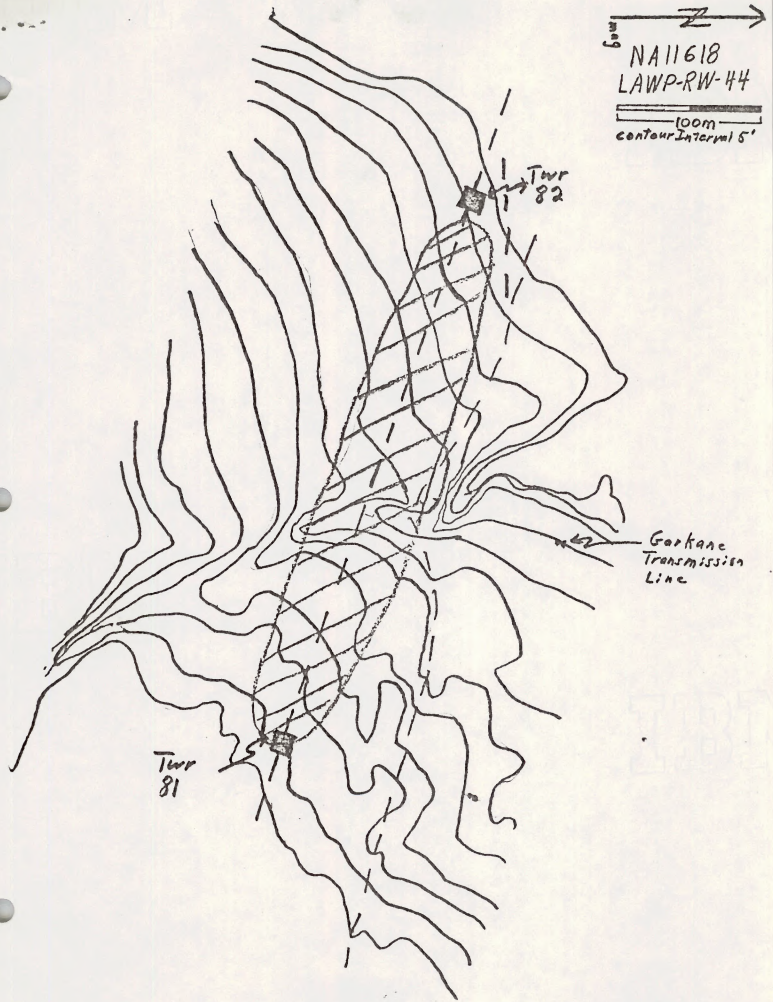
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NA11618
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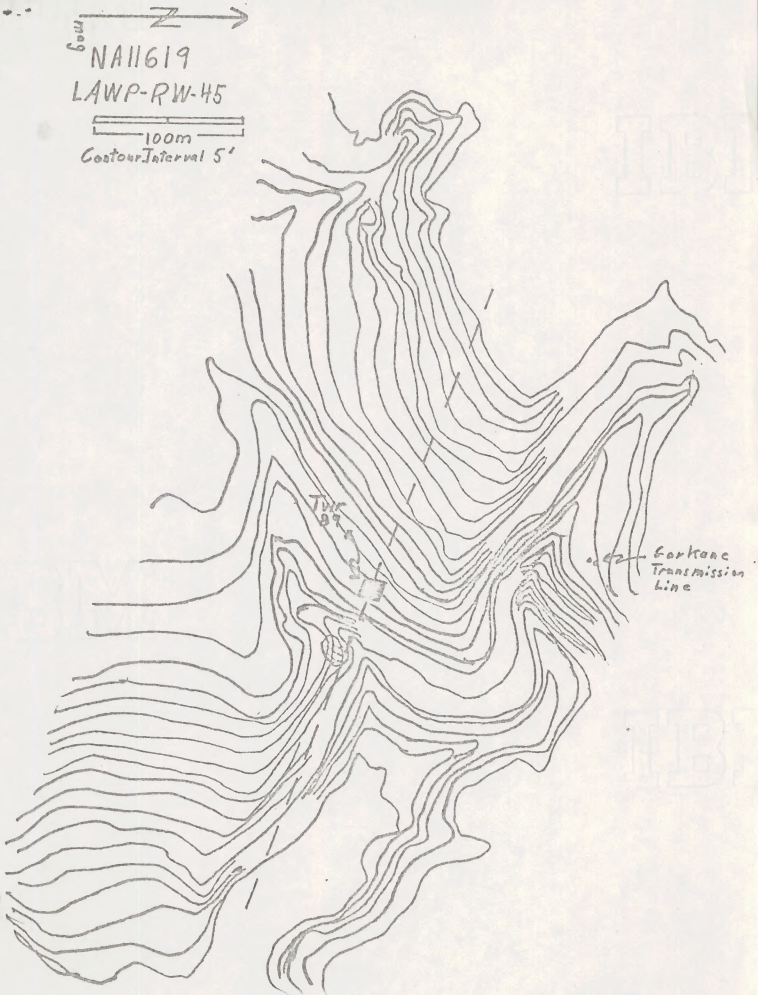
100m
contour Interval 5'
Twr 82
Twr 81
Gorhane Transmission Line


map
N
NA11619
LAWP-RW-45
100m
Contour Interval 5'
Gorhane
Transmission
Line

MUSEUM OF NORTHERN ARIZONA
DEPARTMENT OF ANTHROPOLOGY

ARCHAEOLOGICAL CLEARANCE INVESTIGATIONS

NATIONAL PARK SERVICE

NORTH RIM SPUR ROADS, CANYON DE CHELLY NATIONAL MONUMENT

ROUTE N64, NATIONAL PARK SERVICE SPUR ROADS RIGHT-OF-WAY

NAVAJO INDIAN RESERVATION, LAND DISTRICTS 10 AND 11

APACHE COUNTY, ARIZONA

CONTRACT NO. 14-10-3-930-252

Preliminary Report

for

Archaeological Excavations

Navajo Site

NA11,302 - Ariz. E:15:26(MNA) - CDM-91

Spur Road 4

Prepared by:

Charles D. James III
Archaeologist

Submitted by:

Alexander J. Lindsay, Jr.
Coordinator of Archaeological Research

December 31, 1972

ABSTRACT: The Museum of Northern Arizona excavated a historic Navajo site, NA11,362, situated within the right-of-way of Route N64, Spur Road 4. Excavations revealed the remains of a forked-stick hogan, ash dump, and a feature possibly associated with mealing activities. A pre-1900 occupation at this site is suggested.

INTRODUCTION

Between November 9 and 10, 1972, the Museum of Northern Arizona excavated a historic Navajo site, NA11,362, in the right-of-way of Route N64, Spur Road 4. The excavation of the site was supervised by Charles D. James III, Museum archaeologist, using a labor group of eight local men. Steve Wilson, archaeological assistant, acted as recorder.

THE SITE

NA11,362 is situated at an elevation of 6808 ft. in an east sloping valley which terminates in a large rincon at the north rim of Canyon del Muerto. This rincon is 0.5 mi. east of the site and offers a spectacular view of the canyon's depths.

The valley is surrounded by a dense growth of pinyon and juniper, with prickly pear cactus, black sagebrush, narrow-leaf yucca, and rabbit brush also present. To the east of the site in the valley bottom, a large area which shows evidence of previous wood cutting is covered by a dense growth of black sagebrush. An extremely sparse amount of various grasses are found in areas naturally protected from grazing.

The site is located between Stations 10+50 and 11+50 of Route N64, Spur Road 4, with a portion of the site extending

beyond the right-of-way to the east.

The presence of a site was indicated by the collapsed framework of a forked-stick hogan. Subsequent excavations using visible architecture and a series of 2.0 m. grid squares revealed the circular forked-stick hogan, ash dump, and a small feature possibly associated with mealing activities.

Hogan 1

This is a forked-stick hogan marked by a circular outline 4.4 m. long, 4.1 m. wide, 0.4 m. deep, with a rectangular entryway to the east. This entryway is indicated by two post-holes and a juniper stump. A fire area is located slightly off center towards the entry. A total of 36 peripheral post-holes were found with 14 post stumps still in place. The posts supported a conical wooden superstructure which had collapsed and was removed prior to excavation. Artifacts recovered from the hogan include two manos, one metate, one pottery spoon, shell fragments, and a piece of glass.

Ash Dump 1

Located 2.0 m. east of Hogan 1, this ash dump is 1.5 m. long, 1.3 m. wide, and 0.1 m. high. No stratigraphy is present, and it appears that exposure to natural elements has expanded the overall size. The fill consists of ash, charcoal, bone, sherds, and one piece of metal.

Feature 1

Located northeast of Hogan 1 and north of the ash dump is an area of sandstone rock and metate fragments. This feature may have been a mealing area, possibly a metate rest.

SITE HISTORY

Attempts to locate information concerning this site's history were unsuccessful. Another well-preserved, forked-stick hogan is 300 yds. east of Hogan 1, and a collapsed sweathouse is between them, 200 yds. to the east. Both are probably a part of the settlement represented by Hogan 1. The abandonment of the site may have been due to a death occurring at the settlement area, as a burial is present in the second hogan. Because of the near absence of historically datable material and the amount of Navajo manufactured pottery, occupation at the site is placed prior to 1900.

RECOMMENDATIONS

NA11,362, situated between Stations 10+50 and 11+50 of Route N64, Spur Road 4, has been excavated and archaeological clearance for this section of the right-of-way is recommended. The second hogan with its burial and the sweathouse are far enough east of the site to be masked by the terrain and vegetation, and appear to be out of danger from road-building activities. It is recommended that the location of the burial hogan and sweathouse be plotted on a map, which should be consulted whenever maintenance or future planning of this area is considered. These remaining, pristine components of the settlement should be thought of in terms of future protection, since the impact of traffic through this area cannot be underestimated. The integrity of the burial hogan should be preserved.

MUSEUM OF NORTHERN ARIZONA
DEPARTMENT OF ANTHROPOLOGY

ARCHAEOLOGICAL CLEARANCE INVESTIGATIONS

NATIONAL PARK SERVICE

NORTH RIM SPUR ROADS, CANYON DE CHELLY NATIONAL MONUMENT

ROUTE N64, NATIONAL PARK SERVICE SPUR ROADS RIGHT-OF-WAY

NAVAJO INDIAN RESERVATION, LAND DISTRICTS 10 AND 11

APACHE COUNTY, ARIZONA

CONTRACT NO. 14-10-3-930-252

Preliminary Report

for

Excavations of Historic and Prehistoric Sites NA11,361

Through NA11,379 and NA11,549 through NA11,551:

Spur Roads 1 through 4, North Rim, Canyon del Muerto,

Canyon de Chelly National Monument, Arizona.

Prepared by:

Charles D. James III
Archaeologist

Submitted by:

Alexander J. Lindsay, Jr.
Coordinator of Archaeological Research

December 15, 1972

ABSTRACT: Between August 2, 1972, and November 17, 1972, the Museum of Northern Arizona, under contract to the National Park Service, conducted archaeological investigations at 22 historic and prehistoric sites within the right-of-way of Route N64, National Park Service Spur Roads. These sites reflect an intensive use of the area during the Pueblo I-II periods, and again in the De Chelly phase and the Reservation period of the Navajo. Ethno-historical material pertaining to the post-A.D. 1900 sites was collected and an extensive survey of the archaeological resources adjacent to the right-of-way was conducted during the course of excavations.

INTRODUCTION

The Museum of Northern Arizona contracted with the National Park Service in July, 1972, to conduct archaeological salvage excavations within Canyon de Chelly National Monument, Navajo Indian Reservation, Land Districts 10 and 11, Apache County, Arizona.

The excavations were done in conjunction with the National Park Service's Route N64, Spur Roads, which are an aspect of the Bureau of Indian Affairs Route N64, Chinle to Tsaile Lake Road. The spur roads will provide access to overlooks along the north rim of Canyon del Muerto at points near Navajo Fortress, Antelope House, Massacre Cave, and Mummy Cave (Spur Roads 1-4 respectively).

The right-of-way for these spur roads was initially surveyed by V. K. Pheriba Stacy and Don P. Morris of the National Park Service in February, 1972, and a brief reconnaissance was conducted in May, 1972, by Charles D. James III of the Museum of Northern Arizona. A total of 19 sites (NA11,361 to NA11,379) were recorded by these combined surveys. Subsequently, the

Museum of Northern Arizona contracted with the National Park Service (Contract No. 14-10-3-390-252) for the excavation of these sites.

Excavations commenced on August 2, 1972, and continued until November 17, 1972, at which time field operations were terminated. During the excavation program it was found that two of the sites (CDM 100 - NA11,370; and CDM 102 - NA11,372) originally recorded by the National Park Service were actually components of larger sites (CDM 99 - NA11,369; and CDM 101 - NA11,371). Consequently, CDM 100 and CDM 102 were subsumed under NA11,369 and NA11,371 respectively. The Museum of Northern Arizona site numbers originally assigned to these sites were then reassigned to new sites later recorded during the course of work. A total of five new sites were located within the right-of-way; these are NA11,370, NA11,372, NA11,549, NA11,550, and NA11,551. Site concordances are designated in Appendix I.

With the consent of Mr. William C. Benneweis, Superintendent, Canyon de Chelly National Monument, these sites were included in the conduct of the excavation project under the original contract. During excavations it was possible to gather ethnohistoric data pertaining to post-A.D. 1900 sites. In addition, the land adjacent to the right-of-way was extensively surveyed for a better understanding of the archaeological base resource of the north rim and to facilitate the understanding of inter-site relationships.

ENVIRONMENT

The project area extends along the north rim of Canyon del Muerto in a southwest to northeast direction. The area rises in elevation from 6200 ft. to 6900 ft., and is within the Upper Sonoran Life Zone. The vegetation changes from a desert grassland to a pinyon-juniper woodland near Antelope House spur road and the tree density becomes greater towards the higher elevations of the project area.

The soil towards the lower portion of the project is a clay type changing to sand near the canyon edge, with one area of active dune blowouts encountered. At the higher elevations the soil is mainly a sandy loam with a heavy cover of humus. Exposed bedrock is noticed along the canyon rim and areas of exposed rock are common along washes and arroyo cuts.

The native faunal component of the area is sparse. Tracks of deer, small mammals and reptiles, and various avian apecies were observed. Domestic animals present throughout the area are cattle, sheep, horses, and dogs. Sheep tracks are evident in great numbers. The heavy usage of this area by the domestic animals may account for the scarcity of native forms.

RESEARCH DESIGN

The Museum's research design established for this project prior to field work was oriented to a cultural historical approach using the prehistoric, protohistoric and historic occupations of the north rim of Canyon del Muerto. This generalized approach was chosen because the sites offered a fruitful body of data to this orientation and comparative data

for prehistoric and Navajo remains was available to some degree.

Specific problems for study by excavation and laboratory analysis were formed according to the type of sites encountered. Prehistoric sites represented one body of data; Navajo sites were placed into another. The initial surveys indicated Navajo sites had either ceramic or metal components; these were classified in sub-categories based on Hester's concept for the Navajo occupation of the Canyon de Chelly Region (Hester 1963: 66-67). Accordingly, sites could tentatively be assigned to the De Chelly phase (A.D. 1770-1863) and the Reservation period (A.D. 1863-Present). The Reservation period was then arbitrarily divided into Early (1863-1900), Middle (1900-1945), and Late (1945-Present).

Specific problems were formulated into an outline, as follows:

I. Prehistoric Sites
   A. Do the ceramic components of the sites indicate similar people occupying the canyon and rim?
      1. Is there evidence of trails or features that reflect inter-site relationships of the rim, or between the canyon and rim?
   B. What is the nature of ecological exploitation concerning the sites?
      1. Is there evidence to indicate farming activities?
      2. Were the sites occupied seasonally?

II. Historic Sites
   A. De Chelly Phase
      1. Do sites of this period conform to the existing concept for the area as given by Hester (1963)?
      2. Is there evidence of seasonal occupation at the sites?
      3. Is there evidence of inter-site relationships on the rim, or between the canyon and rim?
      4. Is there a continuum from the sites to sites that are later in time?
      5. What is the nature of ecological exploitation at the sites?
   B. Reservation Period
      1. Is there evidence of seasonal occupation at the sites?

2. Is there evidence of inter-site relationships on the rim, or between the canyon and rim?
3. Can ethno-historical data be used to answer questions about demography, settlement patterns, and trade relations?

The apparent lack of knowledge on the prehistoric and historic sites for this area, and the possibility of inter-site relationships between the canyon and rim led to an extensive survey of the land adjacent to the right-of-ways. The results of this survey helped determine inter-site relationships by the location of previously unrecorded sites, trails, and paths.

Interviews were an important facet of the survey, especially for the landholders of the late Reservation period sites. Information was solicited from informants at this time about the sites (see Appendix II). In conjunction with the field interviews, one taped interview was conducted by David M. Brugge, Hubbell Trading Post National Historic Site, and Charles D. James III, Museum of Northern Arizona. This interview was with a long term occupant of the area who had lived at several of the earlier Reservation period sites.

METHODOLOGY

Because excavations included both prehistoric and Navajo sites, the methodology varied according to the type of site excavated. Architectural features were excavated by their proveniences whenever encountered. This procedure was almost exclusively the case with Reservation period sites. The prehistoric and De Chelly phase sites seldom had visible architecture or features, and a grid system of 2 m. by 2 m. grid squares was used. At several sites the grid system was not a practical method and trenches were used to locate features.

Soil from architectural features, ash dumps, and trash deposits was passed through a ¼ in. mesh screen. The soil from grid squares and trenches was also screened when possible. The extreme wetness of the soil during the latter part of the excavation program caused screening to be changed in favor of careful viewing of the soil as it was removed.

Pollen samples were collected from the floor of all architectural units. At hogans, pollen was collected from each quarter (with the axis of the sections orientated to the doorway). Soil samples were also taken from the majority of features, and tree-ring specimens were collected whenever possible.

The nature of the late Reservation period sites warranted contacting the landholders of these units. Persons contacted were brought to the site and interviewed as to their wishes concerning the site areas proposed for excavation. If there were no objections, the person was asked if they would care to volunteer information concerning the site. If the person was

agreeable, questions from a list of previously established categories of information were asked. The list included queries on availability of resources, trading localities, farming and herding activities, residence size, and inter-site relationships. Several questions concerning the construction of the hogan were also included.

All past landholders (with the exception of one) were contacted and direct verbal consent for excavations was received. In the case of one person who was unable to be located prior to excavations, a crew member contacted the person "in the canyon' and explained the circumstances. This person then gave verbal consent for excavations. All of the landholders (with the exception noted) also contributed ethno-historical data about the sites.

This approach to the excavation of Late Reservation sites. explaining the reason for excavations and securing the verbal consent of the landholders, and attempting to avoid questions that might be considered "prying", proved agreeable to the residents and Chapter groups of the area. Local residents and visitors stopped at the excavations over a period of time and maintained an interest in the progress of the project.

EXCAVATIONS

Excavations commenced on August 2, 1972, and terminated on November 17, 1972. Charles D. James III, Salvage Archaeologist, was the project supervisor and was assisted at various intervals by Kathleen G. James, Susan Orpett, and Steve Wilson, Archaeological Assistants. Excavations were accomplished by a crew of

local residents which varied in size from four to eight men. A total of 22 sites were excavated in this period of time, as was the collection of ethno-historical data and the conduction of the survey adjacent to the right-of-way.

Inclement weather plagued the excavations, forcing work to be halted on 14 separate occasions. Holidays accounted for an additional two days, and the road access to the project (which can be described as poor to worse after the rains), caused a total of six days lost to vehicle repair and maintenance.

The work accomplished by month is as follows:

August 1972
Sites Excavated: NA11,366; NA11,367; NA11,376; NA11,377

September 1972
Sites Excavated: NA11,368 to NA11,375

October 1972
Sites Excavated: NA11,363 to NA11,365

November 1972
Sites Excavated: NA11,361 to NA11,362; NA11,378 to NA11, 379; NA11,549 to NA11,551.

SUMMARY OF EXCAVATIONS

The preliminary results of the excavation program point to a major occupation of the rim area in the vicinity of Massacre Cave and Mummy Cave in the Pueblo I period. Evidence of this occupation is seen by a large number of sites (six of eight) which tentatively date to this period. The two remaining sites are tentatively placed in Basketmaker II and Pueblo II periods. Many of the sites appear to be components of larger sites which occupy a large portion of the ridges in this locality. The material recovered at these sites is relatively sparse with no

noticeable trash accumulation. Exterior firepits and hearths point to a seasonal usage, and the sites' location on the north and west exposures support this idea.

In the vicinity of Navajo Fortress, the two sites excavated were both tentatively placed in the Pueblo I period, and appear to be components, possibly temporary work areas, of a larger site which occupies the ridge to the east of the sites.

The excavations conducted in the vicinity of Antelope House reflect a heavy Navajo occupation with both the De Chelly phase and the Reservation period represented. Several hogan types which appear to be common to this area were not noted for the Navajo occupation of Massacre Cave and Mummy Cave area. For the excavation results of specific sites consult Appendix I.

SUMMARY OF SURVEY

The survey conducted adjacent to the right-of-way complements the preliminary findings of the excavation program. One trail linking the canyon and rim area was found in the vicinity of Mummy Cave, and a series of Pueblo I-II sites were located. Several Navajo sites of the De Chelly phase and Reservation period were also located, and there was a noticeable absence of Basketmaker III or Pueblo III-V sites.

In the vicinity of Antelope House, additional hogan types of the De Chelly phase were recorded and a series of foot trails located. One additional trail into the canyon was found. The only additional prehistoric site encountered in this area was of a Basketmaker II affinity.

Along the Navajo Fortress right-of-way a large Pueblo I-II

age site was recorded and several Navajo sites of De Chelly and Reservation age were present.

PROPOSED ANALYSIS

The analytical phase of the project is divided into two parts. One segment will concentrate on the prehistoric sites while the latter will focus on the Navajo sites. Both operations will be directed towards the problems formulated in the research design. Survey data, historical documents, and ethno-historical material will be used to give a better understanding of inter-site relationships.

For the Navajo material, a large gap in the knowledge of the De Chelly phase occupation (Hester 1963: 66; DeHarport 1951:45) may be clarified, while sites of the Reservation period will provide a documentation of subsistence and settlement shifts through time.

SUMMARY

Archaeological salvage excavations were conducted by the Museum of Northern Arizona between August and November, 1972. A total of 22 sites were excavated. In conjunction with the excavation program, an extensive survey adjacent to the right-of-ways was conducted and ethno-historical material was gathered for some of the Reservation period sites. Preliminary results of the excavations indicate an extensive occupation of the rim area near Massacre Cave and Mummy Cave during the Pueblo I-II periods, with later occupation by the Navajo in the latter part of the De Chelly phase or the early Reservation period.

In the area near Antelope House, a small occupation was present in the Basketmaker II period and again in the Pueblo II period. The major Navajo occupation appears to have begun the De Chelly phase, and the area has been heavily occupied by the Navajo since that time, with the exception of the historically recorded "Long Walk".

Preliminary reports will be prepared for all sites excavated prior to the inception of the analytic operations.

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1951 An Archaeological Survey of Canyon De Chelly: Preliminary Report of the Field Sessions of 1948, 1949, and 1950. El Palacio, Vol. 58: No. 2. pp. 35-48. Santa Fe.

Hester, James J.
1963 Early Navajo Migrations and Acculturation in the Southwest. Museum of New Mexico Papers in Anthropology, No. 6. Santa Fe.

MUSEUM OF NORTHERN ARIZONA
DEPARTMENT OF ANTHROPOLOGY

NATIONAL PARK SERVICE PROJECT N64, SPUR ROADS 1-4
CONTRACT NO. 14-10-3-930-252

APPENDIX I

Site Inventory, Location, and Description of Excavation

(All dates tentative pending laboratory analysis. Artifactual material not included in description.)

NA11,361 - CDM 90
Stations: 35+00 to 38+00
Spur Road No. 3
Date: Middle to Late Reservation phase: A. D. 1932 - 1942+
Excavated Features: 1 cribbed hogan with interior bench; 1 ash dump; 1 lambing pen; 1 fire area; 1 tree storage platform was extensively recorded.

NA11,362 - CDM 91
Stations: 10+50 - 11+50
Spur Road No. 4
Date: Early Reservation phase?
Excavated Features: 1 forked stick hogan; 1 ash dump; 1 mealing area.

NA11,363 - CDM 92
Stations: 18+00 to 21+00
Spur Road No. 3
Date: Pueblo I-II
Excavated Features: 4 pit houses (1 with large interior pit); 3 hearths; 2 cists.

NA11,364 - CDM 93
Stations: 8+00 to 8+60
Spur Road No. 3
Date: Pueblo II
Excavated Features: 1 pit house; 2 hearths; 1 fire area.

NA11,365 - CDM 94
Stations: 27+00 to 29+00
Spur Road No. 3
Date: Pueblo I-II
Excavated Features: 2 pit houses; 3 hearths; 2 firepits; 1 fire area; 2 large pits.

NA11,366 - CDM 95
Stations: 2+00 to 7+00
Spur Road No. 2
Date: Predominantly Late Reservation periods: A.D. 1950-1960+
Also Late De Chelly phase or Early Reservation period component.
Excavated Features: 1 cribbed hogan; 1 stone foundation hogan; 1 room foundation; 1 ash dump; 2 chicken coops; 1 firepit; 1 ash area.

NA11,367 - CDM 96
Stations: 23+00 to 25+00
Spur Road No. 2
Date: De Chelly phase
Excavated Features: 3 cribbed hogans with lateral masonry entryways; 1 slab-lined hogan; 1 masonry lined cist; 2 firepits.

NA11,368 - CDM 98
Stations: 45+00 to 47+50
Spur Road No. 2
Date: De Chelly phase
Excavated features: 1 cribbed hogan with stone door markers and 2 interior pits; 1 ash dump.

NA11,369 - CDM 99 and CDM 100
Stations: 30+50 to 34+00
Spur Road No. 2
Date: Middle to Late Reservation period: A.D. 1935-1945
Excavated Features: 2 ash dumps; 1 mealing area; 1 loom foundation.

NA11,370 - AH 1
Stations: 53+25 to 53+75
Spur Road No. 2
Date: De Chelly phase or Early Reservation period.
Excavated Features: 1 ash dump.

NA11,371 - CDM 101 and CDM 102
Stations: 76+00 to 79+00
Spur Road No. 2
Date: Middle Reservation period: A.D. +1915-1925
Excavated Features: 3 cribbed hogans; 3 ash dumps; 1 roasting pit.

NA11,372 - AH 2
Stations: 95+00 to 95+50
Spur Road No. 2
Date: De Chelly phase
Excavated Features: 1 cribbed hogan with lateral masonry entryway.

NA11,373 - CDM 103
Stations: 90+25 to 90+75
Spur Road No. 2
Date: Middle Reservation period: ca. A.D. +1915
Excavated Features: 1 cribbed hogan; 1 ash dump.

NA11,374 - CDM 104
Stations: 97+50 to 98+00
Spur Road No. 2
Date: De Chelly phase or Early Reservation period
Excavated Features: 1 small fire area.

NA11,375 - CDM 105
Stations: 99+25 to 100+00
Spur Road No. 2
Date: De Chelly phase or Early Reservation period
Excavated Features: 1 firepit.

NA11,376 - CDM 107
Stations: 37+00 to 38+00
Spur Road No. 1
Date: Pueblo I
Excavated Features: 1 firepit.

NA11,377 - CDM 100
Stations: 35+00 to 36+00
Spur Road No. 1
Date: Pueblo I
Excavated Features: 1 pit; 1 occupation surface; 1 stump hole.

NA11,378 - CDM 111
Stations: 3+00 to 3+50
Spur Road No. 4
Date: Pueblo I
Excavated Features: 1 hearth.

NA11,379 - CDM 112
Stations: 32+00 to 35+00
Spur Road No. 3
Date: Pueblo I
Excavated Features: 3 hearths; 2 firepits; 1 mealing area.

NA11,549 - MUC 1
Stations: 27+00 to 28+00
Spur Road No. 4
Date: Pueblo I
Excavated Features: Site eroded; no features recovered.

NA11,550 - MUC 2
Stations: 30+00 to 32+00
Spur Road No. 4
Date: Pueblo I
Excavated Features: 3 fire areas.

NA11,551 - MUC 3
Stations: 42+50 to 43+00
Spur Road No. 4
Date: Basketmaker II
Excavated Features: Site eroded; no features recovered.

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DEPARTMENT OF ANTHROPOLOGY

NATIONAL PARK SERVICE PROJECT N64, SPUR ROADS 1-4
CONTRACT NO. 14-10-3-930-252

APPENDIX II

Ethno-historical Data Collection: Inventory

NA11,361 - CDM 90
Stations: 35+00 to 38+00
Spur Roads No. 3
Data Source: Primary. Previous occupant.

NA11,366 - CDM 95
Stations: 2+00 to 7+00
Spur Road No. 2
Data Source: Late Component. Indirect. Neighbors living in area.
Early Component. Indirect. Descendant of occupant.

NA11,369 - CDM 99 and CDM 100
Stations: 30+50 to 34+00
Spur Road No. 2
Data Source: Primary. 2 previous occupants.

NA11,371 - CDM 101 and CDM 102
Stations: 76+00 to 79+00
Spur Road No. 2
Data Source: Primary. previous occupant.
Indirect. Descendant of occupant.
Indirect. Neighbor living in area.

NA11,373 - CDM 103
Stations: 90+25 to 90+75
Spur Road No. 2
Data Source: Indirect. Neighbor of occupant.

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1972

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DEPARTMENT OF ANTHROPOLOGY

ARCHAEOLOGICAL RECONNAISSANCE
GRAND CANYON NATIONAL PARK
SHIVA TEMPLE
COCONINO COUNTY, ARIZONA

Final Report

for

An Archaeological Reconnaissance of

Prehistoric and Historic Sites on

Shiva Temple in Grand Canyon National Park

Prepared by:

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Archaeologist

Submitted by:

Alexander J. Lindsay, Jr.
Coordinator of Archaeological Research

September 17, 1972

ABSTRACT: The Museum of Northern Arizona's biological expedition to Shiva Temple in Grand Canyon National Park included an archaeological survey of the mesa top. Five sites were recorded, including the campsite of the American Museum of Natural History expedition of 1937. Archaeological remains suggest that Shiva Temple was used seasonally by prehistoric hunters and plant gatherers.

Because of the known archaeological remains on Shiva Temple, reported by Harold E. Anthony of the American Museum of Natural History in 1937, the author accompanied the Museum of Northern Arizona's 1972 biological expedition to Shiva to investigate the archaeological resource potential and to record and study Anthony's camp, which is now of archaeological and historical interest.

PREVIOUS ARCHAEOLOGICAL INVESTIGATION

In 1937, the American Museum of Natural History expedition to Shiva Temple collected 40 worked "flint" items, including a core, flakes, three blanks, an endscraper, a perforator, a fragmentary drillpoint, and two fragmentary "spearpoints" (Anonymous 1937)". Also collected were 24 potsherds described as "plain gray unslipped", "plain white slipped", black-on-white, and corrugated.

Harold E. Anthony, the leader of the expedition, reported finding several "yant ovens" with sherds and lithics associated. He suggested that these ovens were used for roasting mescal (Anthony 1937a:247).

Anthony concluded that "Pueblo Indians, not much later than about 1000 A.D., climbed Shiva Temple to collect flint and

harvest mescal (1937b:775)."

1972 ARCHAEOLOGICAL SURVEY

The Museum of Northern Arizona expedition spent five days on Shiva Temple. During that time, the author had an opportunity to examine most of the mesatop for archaeological remains. In addition, the other three members of the expedition, all biologists, helped in the reconnaissance for archaeological remains.

Surveying was made difficult in many areas on Shiva by a thick covering of pine needles and pine cones on the ground. Also, a large portion of the mesatop lacked landmarks, so that it was difficult to tie down the location of sites, and very easy to become lost.

A collection of artifacts was made from each site record and, although no statistical random sampling techniques were used, an attempt was made to keep the collections reasonably representative. A general surface collection was made for stray finds.

PREHISTORIC SITES

Four prehistoric sites were recorded on Shiva Temple (F
An inventory of the sites follows:

NA11,424 - Ariz. B:16:2(MNA). A structure of limestone blocks with one room which is 1.5 m. by 2.0 m. Scattered building stones suggest one or more other rooms. A scatt of sherds, chipped stone, and a few pieces of ground sto extends about 10 m. around the structure.

NA11,426 - Ariz. B:16:4(MNA). The site consists of an oval cluster 1.9 m. by 2.2 m. of limestone rocks ranging from 5 to 20 cm. in length. The cluster appears to have several layers of stone, suggesting that it is in a pit. A few pieces of chipped stone, but no sherds, were found near the cluster. This is the "yant oven" pictured by Anthony (1937b:719).

NA11,427 - Ariz. B:16:5(MNA) and NA11,428 - Ariz. B:16:6(MNA). These sites are two of many lithic scatters that are located on Shiva (Fig. 2). No sherds were found associated with these two scatters and only a few isolated sherds were found associated with the other scatters.

ARTIFACTS

Chipped Stone. Each piece of chipped stone was examined for wear under 10X hand lens. Table 1 lists the chipped stone types.

Flake scrapers are the most common tools found and are present at every site. One flake scraper from the general surface collection has polish on the working edge suggesting that it was used on hide or some other soft material with fine particles of grit adhering.

The notched and denticulate scrapers were probably used in the processing of plant and animal materials.

The biface knives were probably hafted and used for skinning and butchering game and for processing mescal. The biface fragments, biface preforms, and much of the debitage is most likely associated with the manufacture of biface knives.

The only complete projectile point is leaf-shaped and side-notched, similar to those termed "standard Basketmaker II types" by Lindsay and others (1968:46 and Fig. 23p,q). A projectile point fragment of obsidian is the only artifact found definitely made of material not available on Shiva.

Ground Stone. Ground stone from Shiva Temple included a one-handed sandstone mano from NA11,424, a sandstone cobble handstone fragment from the general surface collection, a sandstone mano fragment from the general surface collection, and a chipped sandstone disk and two small sandstone abraders from NA11,424 (not collected).

Ceramics. Table 2 lists the pottery types found on Shiva Temple. The collection is generally what would be expected from the area, with the great majority of sherds being Virgin types. Only Citadel Polychrome, Dogoszhi Black-on-white, Sosi Black-on-white, and Tusayan Corrugated can be considered intrusive. These total only 7 of 59 sherds.

Two vessel forms are represented in the collection; sherds of polychrome, black-on-white, and black-on-gray vessels are bowl forms, the corrugated and gray vessels are jars.

Most of the types date within the range of late Pueblo II to early Pueblo III. A reasonable estimate for the habitation of NA11,424 would be somewhere between A.D. 1075 and 1150.

THE PREHISTORIC OCCUPATION OF SHIVA TEMPLE

Shiva Temple was probably first visited by prehistoric hunters after deer or other mammals. Today there is considerable evidence, in the form of antlers and bones, that deer come to

Shiva during the winter (antlers are dropped in February and March), probably because it has a slightly milder climate than the North Rim (Anthony 1937a:247).

The plant resources of Shiva were no doubt also attractive to prehistoric people. The ovens on Shiva were most likely used to roast mescal, Agave sp. during the spring (see Greer 1965 for details of mescal roasting), although ovens were also used for roasting prickly-pear, Opuntia sp. (Coville 1892), and the fruits of the broad-leaved Yucca, Y.baccata (Whiting 1966:71). Other edible plants on Shiva include pinyon pine, Pinus edulis; one-seed juniper, Juniperus monosperma; mariposa lily, Calochortus nuttallii; creeping mahonia, Berberis repens; wax currant, Ribes cereum; and wild-buckwheat, Eriogonum sp.

Shiva is covered with chert nodules that have eroded from the Kaibab Limestone. However, this resource most certainly was not the main attraction of Shiva to the prehistoric peoples as Anthony believed, since the North Rim is equally endowed with chipping materials. The lithic scatters that cover Shiva probably represent areas where hunting, butchering, and plant processing implements were manufactured for use on the mesatop.

The only evidence of lengthy occupation on Shiva is NA11,424. It probably represents a single family residence similar to those re those reported by Hall (1942:8-9) on the Walhalla Plateau, 12 mi. east of Shiva Temple. It was probably not a permanent habitation site, as there is no water on Shiva except that from precipitation. The nearest permanent sources of water are Crystal Creek or Phantom Creek, both many strenuous hours-walk away.

The artifactual assemblage of NA11,424 suggests that a number of activities were being carried out at the site including the grinding of plant materials and the manufacture of hunting and butchering implements. Definite evidence of corn agriculture was not found at this site or on the mesatop in general.

The data from this survey can illuminate little concerning the abandonment of Shiva. All that can be said is that there is no evidence of human occupation of Shiva from about A.D. 1150 until A.D. 1937.

HISTORIC SITE

One of the primary purposes for an archaeologist's accompanying the Museum's expedition to Shiva Temple was to record and study the campsite of Harold E. Anthony of the American Museum of Natural History. Anthony and his assistant stayed on Shiva from Sept. 16 to about Sept. 26, 1937. The expedition members were the first known scientific group on Shiva.

Anthony's camp was located on the north side of Shiva, about 15 m. from the cliff-edge (Fig. 1). It was recorded as NA11,425 - Ariz. B:163(MNA).

The camp (Fig. 3) consisted of a partially fallen table with bench, made of cut juniper poles fastened with cotton cord, a hearth of limestone chunks filled with charcoal and ash, a line of large rocks running between two juniper trees that probably formed one edge of Anthony's tent, two 10 gal. milk cans used by the expedition to hold water, and numerous tin cans and bottles. The materials were in a pristine state of preservation. The cotton string supporting the table was still strong. The

paper labels remained on many of the cans. The camp looked closer to 10 yrs. than 35 yrs. old.

In making inferences from the data from Anthony's camp, we can get some valuable insight into the making of behavioral interpretations from material remains. This is made simple by the fact that for this site we know beforehand the answer to almost any question we wish to ask.

Four areas commonly of concern to archaeologists are the delimitation of components, chronology, site funciton, and subsistence.

Components. NA11,425 is actually a two component site since Anthony located his camp near the edge of a prehistoric lithic scatter, NA11,428. Although we are presently able to distinguish the two components, there is a time in the future when nothing of Anthony's camp will remain but the hearth, the line of stone, and a bottle. The rock features could easily pass as prehistoric, and thus the bottle would be the only obvious historic artifact remaining.

Chronology. The camp can be fairly well dated from the artifactual remains. The two milk cans are marked "4 PHOENIX 36", which probably represents a manufacture date of April, 1936. Two canned food labels have copyright dates of 1923 and 1935. The exact year and season of occupation might be obtained by dendrochronology, as there are numerous cut logs and branches near the camp.

Function. The only activities that are evident from the artifactual remains are cooking, eating, drinking, and chopping wood.

The scientific nature of the occupation is not reflected in the material remains that were collected. Without historical documentation, this site and many others like it will probably remain an enigma to future archaeologists.

Subsistence. The following foods and drinks used by Anthony could be determined archaeologically - coffee, canned milk, soups, spiced luncheon meat, corned beef, canned corn, canned pineapple, canned tomatoes, honey, beer, and limewater. Foods not found but listed by Anthony (1937a and 1937b) are canned beans, canned peas, fresh eggs, and packaged cheeses.

One important difference between the documentation of prehistoric site subsistence and the documentation of historic site subsistence is that in the prehistoric case, we must rely solely upon the presence of organic remains for exact documentation of the diet, while in the historic case, we can often rely upon the identification of the containers that held food for reconstructing the diet. At Anthony's camp, the only organic food remaining was some honey in a sealed jar. All the other foods were identified by the labels on cans and bottles.

SUMMARY AND RECOMMENDATIONS

Shiva Temple is only a very small fraction of the Grand Canyon area that was occupied prehistorically. A survey such as the one conducted by the Museum on Shiva can answer only a few questions. It can, however, raise relevant questions that can be used to guide further research.

A leading question concerns the nature of seasonal popu-

lation movements in the canyon area. All evidence on Shiva points to a seasonal occupation by plant gatherers and hunters, although the habitation site, NA11,424, raises some questions. Excavation of this site, along with one or two similar sites on the North Rim for comparison, and a survey of the canyons surrounding Shiva, would be very valuable.

An even broader question concerns the nature of the settlement and abandonment of the canyon area, both of which occurred dramatically. The area, of which Shiva Temple is only a small part, is an important repository of data on prehistoric population dynamics, and is worthy of careful and intense investigation.

ACKNOWLEDGEMENTS

I would like to thank the other members of the expedition, Steven W. Carothers, John R. Haldeman, and N. Joseph Sharber, for their assistance in the field and at the Museum. I also wish to thank Alexander J. Lindsay, Jr. for his comments and suggestions on this manuscript.

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TABLE 1

Chipped Stone Count from Shiva Temple Prehistoric Sites

Chipped Stone Type*	Chipped Stone Count NA11,424	NA11,426	NA11,427	NA11,428	Gen.Sur.Coll.
Flake Scraper	14	2	9	9	7
Notched Scraper			1	1	2
Denticulate Scraper	1				
Multiple Scraper(Denticulate Flake)					2
Flake Knife	1				
Biface Knife Fragments	4				
Projectile Point					1
Projectile Point Fragment	3				5
Unutilized Biface Fragment	4	1	1		10
Unutilized Biface Preform				1	3
Hammerstone	1	(not collected)			
Debitage	10	4	15	25	12
Totals	38	7	26	36	42

* See Singer and Gibson 1972 and Christenson 1972

TABLE 1

Chipped Stone Count from Shiva Temple Prehistoric Sites

Chipped Stone Type*	Chipped Stone Count NA11,424	NA11,426	NA11,427	NA11,428	Gen.Sur.Coll.
Flake Scraper	14	2	9	9	7
Notched Scraper			1	1	2
Denticulate Scraper	1				
Multiple Scraper (Denticulate Flake)					2
Flake Knife	1				
Biface Knife Fragments	4				
Projectile Point					1
Projectile Point Fragment	3				5
Unutilized Biface Fragment	4	1	1		10
Unutilized Biface Preform				1	3
Hammerstone	1	(not collected)			
Debitage	10	4	15	25	12
Totals	38	7	26	36	42

* See Singer and Gibson 1972 and Christenson 1972

TABLE 2

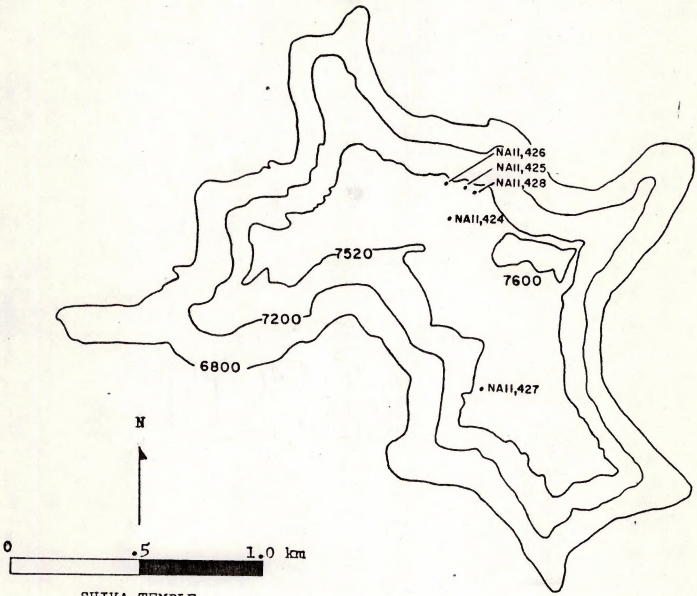
Sherd Count from NA11,424 and General Surface Collection

Pottery Type*	Sherd Count NA11,424	Gen.Sur.Coll.
Citadel Poly.	1	
Dogoszhi B/w	1	
Hurricane B/g	3	
Logandale Gr.		2
North Creek B/g	3	1
North Creek Corr.	15	5
North Creek Gr.	13	1
St. George B/g	2	
Shinarump Corr.	2	
Sosi B/w		3
Tusayan Corr.	2	
Virgin B/w, Dogoszhi style	1	
Virgin B/w, Sosi style	3	1
Total	46	13

* Identifications based on the Museum Ceramic Repository reference collection.

FIGURE I

Map of Shiva Temple Showing Location of Sites



SHIVA TEMPLE

1972 ARCHAEOLOGICAL BASE MAP

Figure 2. Shiva Temple lithic scatter, NA11,428. Only about 25 per cent of the scatter is artifactual. The rest is natural chert spalling.

Figure 3. NA11,425, campsite of the American Museum of Natural History expedition of September, 1937.

MUSEUM OF NORTHERN ARIZONA
DEPARTMENT OF ANTHROPOLOGY

ARCHAEOLOGICAL CLEARANCE INVESTIGATION

TUCSON GAS AND ELECTRIC COMPANY

SAN JUAN-VAIL TRANSMISSION LINE RIGHT-OF-WAY

NEW MEXICO - ARIZONA

Interim Report

for the

Listing of All Sites Recorded on

Apache and Gila National Forest Service Lands

During the Archaeological Survey of Route 1-A of the

San Juan-Vail 345 KV Transmission Line Right-of-Way

New Mexico and Arizona

Prepared by:

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Submitted by:

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Coordinator of Archaeological Research

December 5, 1972

ABSTRACT: This supplemental interim report is a tabulation of all archaeological sites recorded by the Museum of Northern Arizona on Apache and Gila National Forest lands during the survey of the 300 ft. right-of-way of the TG&E San Juan-Vail 345 KV Transmission Line. In addition to site numbers, approximate proveniences, cultural affiliation, and TG&E's planned action are included. The list covers a section of right-of-way from the north border of the Apache National Forest south to approximately 10 mi. north of the Reactor site (south border of the Apache National Forest).

This seventh interim report dealing with Forest land situated sites was compiled for the convenience of the Tucson Gas and Electric Company and the U.S. Forest Service. All data found in this report has been previously stated in the first five interim reports pertaining to U.S. Forest Service lands. Thirty-seven prehistoric archaeological sites and three historic sites were recorded by Museum of Northern Arizona personnel during the course of the right-of-way survey in the Apache and Gila National Forests, in west-central New Mexico. Only the proposed right-of-way facilities for this project have been investigated, and the sites herein listed pertain to right-of-way contexts. Each site herein is only cursorily described under eight column headings. Each site has been officially given an "NA" number which places it permanently in the Museum of Northern Arizona's site files. In addition to "NA" numbers, each site was given a field number when initially recorded. The "GNF" and "ANF" in the field numbers respectively refers to the Gila National Forest and the Apache National Forest. Twenty-two sites were recorded in the Apache National Forest while 18 sites were recorded in the Gila National Forest.

The heading of right-of-way Station number is a list of approximate map references from the Koogle and Pouls plan and profile sheets of the right-of-way in

the Apache and Gila National Forests. All right-of-way Station numbers stated here are but estimates of the epicenters of the archaeological sites. For exact site boundaries, the Koogle and Pouls plan and profile sheets should be consulted.

The list of P.O.T. intervals is the provenience data recorded while the on-the-ground survey was in progress. All P.O.T.'s increase from north to south, while the "F" prefix refers to the north half of this survey (mostly Apache National Forest). To the south the right-of-way was panelled by P.O.T.'s with "G" prefixes. Somewhere north of the San Francisco River crossing, all letter designations cease and P.O.T.'s are a series of two numbers (i.e., 4/8), and all Points of Intersection are just one numeral.

All townships, ranges, and section numbers were compiled from Koogle and Pouls 1":1000' aerial photographs, and refer to New Mexico, except for the last site (NA11,536) which was recorded at the extreme west end of the 3 mi. corridor at the San Francisco River crossing in Arizona.

Under the next heading of Culture, each site is described either as Historic or Prehistoric. In this region, Historic generally refers to early Anglo occupation. The term of Prehistoric is not elaborated herein, but to refer to site descriptions in the other five interim reports will clarify whether the site is a lithic scatter of undetermined affiliation and time, or a Mogollon site characterized by lithic material, possible architectural remains, and usually pottery fragments which can place the site in a rough time and cultural sequence.

The last and most important column of information supplied in this report is a listing of TG&E's planned course of action regarding each site. Four basic

categories of action have been delineated. Category "A" is complete avoidance of the site and protection of it from direct effects of construction. This category is made up entirely of sites off the right-of-way which appear not to be in any danger. Category "B" is made up of sites in or near the right-of-way which are to be flagged and protected by TG&E during construction activities. It is recommended that the U.S. Forest Service take an active participant role in the ongoing maintenance and protection needed by these sites after construction phases have terminated. Category "C" is made up of sites that are situated in the right-of-way in such a manner that the tower placement of the transmission line will directly affect the archaeological resource base of the area in question. In general these sites appear to be extensive lithic scatters, with large horizontal displacements, but of unknown vertical extent. Category "C" calls for a systematic surface collection of artifactual material and then, if surface evidence warrants it, limited excavation in localized vicinity of the proposed tower site. Only after all of the artifactual material has been removed and recorded, both above and below the surface of a site, can a distinct intra-site location then be recommended for archaeological clearance. Category "D" has been included for possible future considerations. No sites are now in this category, although future engineering changes could conceivably change the status of a site now in the "B" or "C" categories. Category "D" is reserved for those sites which the archaeological establishment determines to be of high data recovery potential and also in direct danger of destruction during construction activities. In this case, the archaeologist must excavate the entire site. Usually this situation would involve a permanent

habitation site; in west-central New Mexico probably a pit house village or a pueblo of masonry construction. The excavation is designed for maximum data recovery while keeping tight controls on horizontal and vertical relationships.

Procedural comment for administrative and field personnel: All items in the previously submitted Interim Reports and in this report shown as Category "B" = flag and protect, are recommended for clearance, contingent upon the protect course action committed to by TG&E.

TG&E SAN JUAN-VAIL TRANSMISSION LINE RIGHT-OF-WAY

A North to South Listing of all Archaeological Sites Located
Along the Right-of-Way on Apache and Gila National Forest Service Lands

Site Number	TG&E Number	Forest	Right-of-Way Station Number	P.O.T.	Township, Range, Section	*Culture	**TG&E Action
NA11,554	TG&E-ANF-29	Apache	144+15	F/13 to F/14A	T3S, R20W, S.28	H	B
NA11,555	TG&E-ANF-32	Apache	315+40	F/34 to F/35	T4S, R20W, S.9	P	B
NA11,556	TG&E-ANF-31	Apache	324+00	F/34A to F/35	T4S, R20W, S.9	P	B
NA11,557	TG&E-ANF-30	Apache	331+00	F/35 to F/36	T4S, R20W, S.9, 16	P	B
NA11,558	TG&E-ANF-33	Apache	510+00	F/48 to F/49	T4S, R20W, S.34, 35	P	B
NA11,559	TG&E-ANF-34	Apache	570+00	F/54 to F/56	T5S, R20W, S.3	P	B
NA11,560	TG&E-ANF-35	Apache	581+26	F/55 to F/57	T5S, R20W, S.3	P	B
NA11,561	TG&E-ANF-36	Apache	588+00	F/56 to F/57	T5S, R20W, S.3	P	B
NA11,562	TG&E-ANF-37	Apache	593+00	F/57 to F/58	T5S, R20W, S.10	P	B
NA11,563	TG&E-ANF-38	Apache	625+00	F/59 to F/60	T5S, R20W, S.10	H	B
NA11,564	TG&E-ANF-39	Apache	650+00	F/61 to F/63	T5S, R20W, S.10, 11	P	B
NA11,565	TG&E-ANF-40	Apache	698+35	F/64 to F/66	T5S, R20W, S.14	P	B
NA11,566	TG&E-ANF-41	Apache	716+00	F/66 to F/67	T5S, R20W, S.23	P	C

* H - Historic
* P - Prehistoric

** A - Avoid and protect
** B - Flag and protect
** C - Systematically surface collect; excavate if necessary
** D - Formally excavate entire site

Site Number	TG&E Number	Forest	Right-of-Way Station Number	P.O.T.	Township Range, Section	*Culture	** TG&E Action
NA11,567	TG&E-ANF-42	Apache	724+00	F/66 to F/68	T5S, R20W, S.23	P	B
NA11,568	TG&E-ANF-43	Apache	748+00	F/70 to F/71	T5S, R20W, S.26	P	B
NA11,569	TG&E-ANF-57	Apache	1090+00	F/101 to F/103	T6S, R20W, S.27	H	B
NA11,570	TG&E-GNF-44	Gila	1162+00	F/106 to F/107	T6S, R20W, S.35	P	B
NA11,571	TG&E-GNF-47	Gila	1165+00	F/106 to F/107	T6S, R20W, S.35	P	B
NA11,572	TG&E-GNF-49	Gila	1235+00	F/109 to F/111	T7S, R20W, S.2	P	C
NA11,573	TG&E-GNF-45	Gila	1271+00	F/117 to F/118	T7S, R20W, S.11	P	B
NA11,574	TG&E-GNF-46	Gila	1300+00	F/120 to F/122	T7S, R20W, S.11	P	C
NA11,575	TG&E-GNF-48	Gila	1320+00 & 1335+00	F/123 to F/184	T7S, R20W, S.11	P	C
NA11,576	TG&E-GNF-51	Gila	1350+00	F/184 to F/186	T7S, R20W, S.14	P	C
NA11,577	TG&E-GNF-52	Gila	1358+00	F/185 to F/187	T7S, R20W, S.15	P	B
NA11,578	TG&E-GNF-58	Gila	1364+00	F/186 to F/188	T7S, R20W, S.15	P	C
NA11,579	TG&E-GNF-50	Gila	1406+00	F/192 to F/193	T7S, R20W, S.22	P	B
NA11,580	TG&E-GNF-59	Gila	1485+00	F/200 to G/3	T7S, R20W, S.27, 28, 33, & 34	P	C
NA11,581	TG&E-GNF-53	Gila	1483+00	G/2 to G/3	T7S, R20W, S.33, 34	P	B

* H - Historic
* P - Prehistoric

** A - Avoid and protect
** B - Flag and protect
** C - Systematically surface collect; excavate if necessary
** D - Formally excavate entire site

TG&E SAN JUAN-VAIL TRANSMISSION LINE RIGHT-OF-WAY (cont'd)

Site Number	TG&E Number	Forest	Right-of-Way Station Number	P.O.T.	Township Range, Section	*Culture	**TG&E Action
NA11,582	TG&E-ANF-55	Apache	1649+00	G/15 to G/16	T6S, R20W, S.9	P	B
NA11,583	TG&E-ANF-56	Apache	1649+00	G/15 to G/16	T6S, R20W, S.9	P	B
NA11,584	TG&E-ANF-54	Apache	1664+00	G/17 to G/19	T6S, R20W, S.16	P	B
NA11,540	TG&E-ANF-7	Apache	-----	G/55 to 2/1***	T9S, R20W, S.30	P	A
NA11,539	TG&E-ANF-6	Apache	-----	2/1 to 2/2***	T9S, R20W, S.30	P	A
NA11,517	TG&E-GNF-3	Gila	ca. 2650+00	P.I. #5	T11S, R21W, S.2	P	A
NA11,516	TG&E-GNF-2	Gila	ca. 2760+00	P.I. #6	T11S, R21W, S.22	P	A
NA11,515	TG&E-GNF-1	Gila	ca. 2850+00	P.I. #7	T11S, R21W, S.33	P	A
NA11,585	TG&E-GNF-60	Gila	3085+00	9/5 to 9/7	T12S, R21W, S.17	P	B
NA11,538	TG&E-GNF-5	Gila	-----	-----	T12S, R21W, S.20	P	A
NA11,537	TG&E-GNF-4	Gila	-----	-----	T12S, R21W, S.19	P	A
NA11,536	TG&E-ANF-8	Apache	-----	-----	T2S, R32E, S.29	P	A

* H - Historic
* P - Prehistoric
** A - Avoid and protect
** B - Flag and protect
** C - Systematically surface collect; excavate if necessary
** D - Formally excavate entire site
*** No longer in right-of-way, old alignment

MUSEUM OF NORTHERN ARIZONA
DEPARTMENT OF ANTHROPOLOGY
1972

MUSEUM OF NORTHERN ARIZONA
DEPARTMENT OF ANTHROPOLOGY

ARCHAEOLOGICAL CLEARANCE INVESTIGATION

TUCSON GAS AND ELECTRIC COMPANY

SAN JUAN-VAIL TRANSMISSION LINE RIGHT-OF-WAY

NEW MEXICO - ARIZONA

Interim Report

for the

Archaeological Survey of a Three Mile Corridor at the

San Francisco River Crossing, East and West of Right-of-Way Station 3144+00,

Gila and Apache National Forests,

Greenlee County, Arizona and Catron County, New Mexico

Prepared by:

Steven L. Fuller
Archaeologist

Submitted by:

Alexander J. Lindsay, Jr.
Coordinator of Archaeological Research

December 5, 1972

ABSTRACT: This interim report describes the archaeological survey of the San Francisco River gorge included in a 3.0 mi. corridor of the proposed Tucson Gas and Electric 345 KV transmission line from Farmington, New Mexico to Vail, Arizona. This report is the result of a week of intensive survey in the canyon, and discusses the archaeological sites found and the methods used in their location or discovery. Also included are recommendations concerning right-of-way clearance for establishing and maintaining the power line in question. There is an Appendix in which site description, location, and recommendations are listed.

INTRODUCTION

This interim report on the archaeological resource base of the San Francisco River gorge within the Gila and Apache National Forests has been requested by Mr. Tom Via, of the Tucson Gas and Electric Company, so as to enable future planning of the transmission line crossing of the canyon as uncomplicated as possible. Many engineering problems are anticipated in this specific project, and any alleviation of archaeological complexities will be welcome. Nevertheless, no archaeological resources should be knowingly sacrificed for the sake of expediency in construction of this major span.

The survey of the river gorge and its caves included that portion of the canyon which fell into Koogle and Pouls 1:200 aerial photographs of the 3.0 mi. wide corridor planned for occupation by the transmission line. Actually, a corridor 4.0 mi. wide was given a reconnaissance, which included over 6.0 linear mi. along the river bottom. The survey included parts of two states. In Greenlee County, Arizona, the canyon occupies portions of T2S, R32E, Sections 20, 21, 28, 29. In Catron County, New Mexico, the survey covered portions of T12S, R21W, Sections 19, 20, 27, 28, 29, 30, 32, 33. All portions of this survey are included in the USGS 15' quad: Big Lue Mountains, New Mexico - Arizona.

The purpose of this survey of the San Francisco River canyon differs somewhat from that of previous surveys in this project. Other sections of the right-of-way have been surveyed by archaeologists and reported in terms of sites found and the possible or probable direct environmental impact upon the archaeological resources by construction activities. As there are no towers planned now for the inner canyon, we are not dealing here with direct impact so much as possible and even improbable long range negative effects of the line upon the archaeology of the area in question.

There are three sites now recorded for this survey of the San Francisco River canyon. All three occupy caves in the bedrock walls of the canyon. During the survey, 19 caves in all were inspected by archaeologists. There were no caves found where the highly fractured nature of the andesitic to basaltic rock did not contribute significantly to some degree of roof-fall and general cave alteration. It is geologically evident that the caves origins are, in fact, due almost entirely to the structural instability of the bedrock described here. The general roof collapse encountered by archaeologists in the caves is an on-going process which need not be hastened by vibrations engineered by nearby heavy construction. To be able to recommend archaeological clearance for a right-of-way over a section of canyon with cultural caves beneath, the archaeological establishment will need the assurance of professional geologists and engineers that construction activities will not hasten the natural destruction now taking place.

One other possible, but improbable, aspect of the environmental impact upon the archaeological sites in the canyon is that of human vandalism. Experience has shown archaeologists that there is an attractive nuisance in the construction of a power line. Professional and casual vandals will inevitably follow a cleared right-of-way in order to gain easy access to nearby sites. This problem is expected to be

minimal during and after the TG&E 345 KV line is completed. No objections of this nature will be stated at this time for two reasons: one, there is virtually no cleared right-of-way in this project and, two, the location of the archaeological sites high above the river bottom makes discovery by any means, except helicopter travel, almost impossible. Therefore, the pristine nature of the archaeological sites is not anticipated to be in jeopardy from human interference, for the immediate future.

In conclusion, several observations on the survey's methodology and success are in order. The original purpose of this reconnaissance of the San Francisco River gorge for at least 4.0 linear airline miles was to survey intensively for a total recovery of archaeological information. Several problems were at once encountered which made the survey less intense than planned. The primary problem was the time factor, not with archaeological personnel so much as with available helicopter time. As stated before, relatively few caves could be located on foot in the canyon, whereas in a helicopter, a nearly total inventory could be taken. After aerial sighting, it was the archaeologist's responsibility to attempt to gain access to the cave from either the canyon floor or from the rim above. Fourteen caves were inspected in this manner. Eleven proved to be empty of artifactual materials. In addition to these fourteen caves, there were approximately five others that looked promising from the air, but could not be approached on foot. The only way to inspect these caves would be with sophisticated mountaineering knowledge and equipment. Even one trained in safe and advanced techniques would be in danger because of the extreme unreliability of the nature of the native rocks.

The archaeologist's are confident that the trunk canyon's survey is complete within the parameters of the project's resources. The tributary canyon system was

not attempted in this reconnaissance. However, several side canyons were given a general investigation. Cityizen Canyon in Greenlee County, Arizona, was flown in the helicopter several miles north from its confluence with the San Francisco River. Nothing was seen there to warrant further investigation. Big Pine Canyon was followed along its path on foot by the archaeologist's in Catron County, New Mexico, for several miles north of its confluence with the San Francisco River, but no sites were observed.

The final phase of the project was a revisit to the canyon with Mr. Brian Garrison, Koogle and Pouls representative, to definitively tie the three sites into the Bechtel Corporations computer bank for future references in construction planning by Tucson Gas and Electric Company. Several photogrametric methods were used in conjuncture with traditional survey techniques (theodolite and stadia rod) to attain absolute accuracy in the location and mapping of the caves.

TUCSON GAS AND ELECTRIC COMPANY
SAN JUAN-VAIL TRANSMISSION LINE
SAN FRANCISCO RIVER CORRIDOR

APPENDIX I

Inventory, Description and Recommendations for Sites Situated In or Near the Three Mile Corridor Proposed for the 300 Ft. Right-of-Way.

SITE: NAll,536 TG&E-ANF-8

LOCATION: Greenlee County, Arizona; T2S, R32E, Section 29, NE¼NE¼.

DATE: Prehistoric, early to middle Mogollon Culture (ca. A.D. 600-800)

DESCRIPTION: The site is situated in a small cave overlooking the San Francisco River from the south wall. The cave is located approximately 240 ft. above the river on a promontory north of a small tributary canyon. Differential weathering and erosion of the volcanic rocks of differing lithologies has left two steep escarpments between the cave and the river below making accessibility difficult. Within the cave, there is cultural material consisting of lithic flakes, ceramics, and various perishables such as corncobs and a burnt juniper log. The roof of the cave has a heavy carbon coating. The cave is a pristine example of a site that has not been altered or destroyed by secondary use either by man or animal. The interior of the cave is 22 ft. deep, 15 ft. wide, and 10 ft. high. The cave opening faces S42°W. Across the mouth of the cave is a crude masonry wall 2 ft. high. To the right of the cave mouth, there is a window which appears to have been pecked through the bedrock, possibly for better lighting or ventilation. Near the mouth of the cave is one vesicular basalt cobble which appears to be an incipient slab metate.

RECOMMENDATION: Avoid relocating the centerline of the right-of-way over this

cave. Any tower construction directly over this site could have adverse effects, as the rock over the site appears too thin to absorb the seismic effects of heavy construction.

ACTION BY TG&E: Avoid, not in right-of-way

SITE: NA11,537 TG&E-GNF-4

LOCATION: Catron County, New Mexico; T12S, R21W, Section 19, SW¼SW¼

DATES: Prehistoric, middle Mogollon (?)

DESCRIPTION: Like TG&E-ANF-8, this site is located in a small cave on the south wall of the canyon. The cave, which is really better described as a rock shelter, is 150 ft. above the canyon bottom, and several hundred feet east of the Arizona-New Mexico state line. The cave faces due west, and is directly opposite the mouth of Citizen's Canyon. The site has had heavy secondary usage by mammals (possibly deer). The site is 33 ft. wide, 15 ft. deep, and almost 20 ft. high. The floor is flat, with no evidence of structures or partitions. Little artifactual material was found, either because of faunal disturbance or light human usage. Most material was recovered from what appears to be a hearth area in the extreme south end of the cave.

RECOMMENDATIONS: As the cave is located at the base of a straight cliff almost 200 ft. high, there appears to be little chance of a tower being erected with such proximity as to endanger the cave.

ACTION BY TG&E: Avoid, not in right-of-way.

SITE: NA11,538 TG&E-GNF-5

LOCATION: Catron County, New Mexico; T12S, R21W, Section 20, SE¼SW¼

DATES: Prehistoric, middle Mogollon (?)

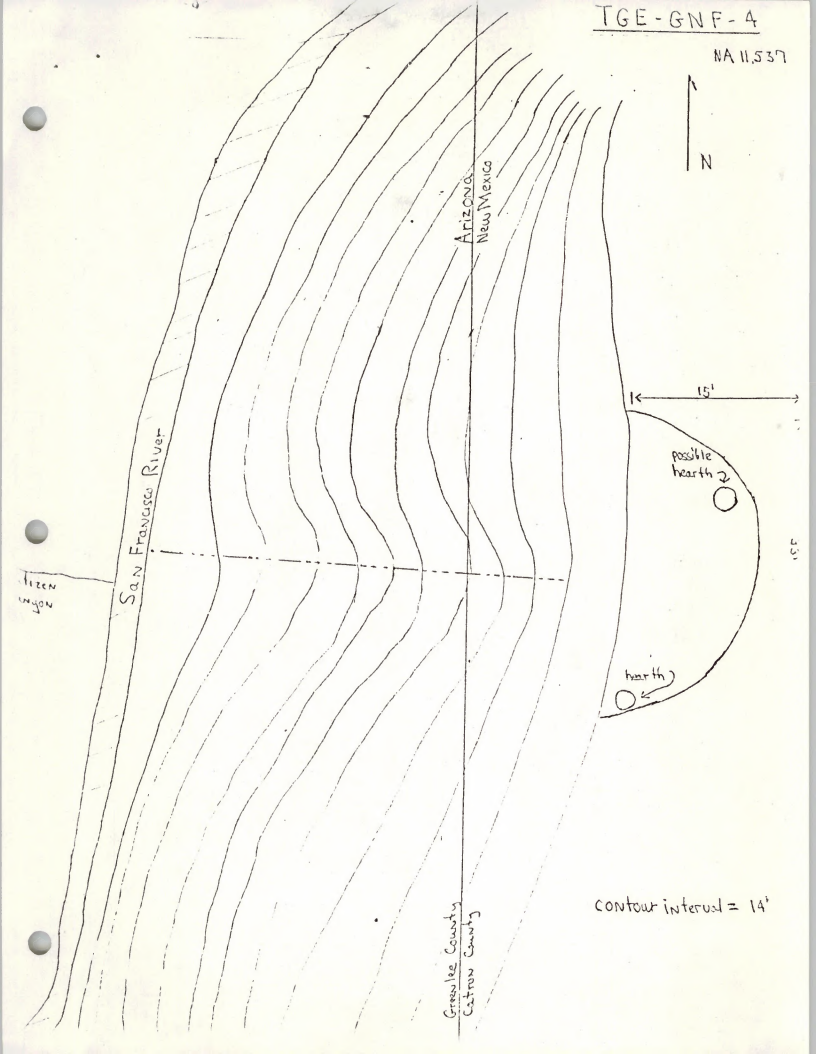
DESCRIPTION: This site is a small cave situated high on the north wall of the San Francisco River canyon, 250 ft. above the river. The site is located approximately 0.25 mi. upstream (east) of the confluence of Big Pine Canyon and the San Francisco River canyon. The cave is 21 ft. wide, 35 ft. deep, with a ceiling approximately 10 ft. high. The floor has been terraced to make the back-half about 1 ft. higher than the front-half. The site has been extensively disturbed and trampled by cattle, who seem to have easy access to the cave from the plateau on the north. The site is rich in perishables, producing sandal knots, corncobs, floor matting, along with the expected lithic and ceramic material. Three slabs of vesicular basalt were recorded near the cave mouth on the surface which appear to have light wear resulting from use in grinding tools. One mano was recovered from the cave surface.

RECOMMENDATIONS: As the cave is siutated high up on the canyon wall, and no extremely thick layers of rock protect the cave from above, it is recommended that any tower construction directly over the cave be studied first so as to ascertain whether vibrations will be destructive to the archaeological site described here.

ACTION BY TG&E: Avoid, not in right-of-way

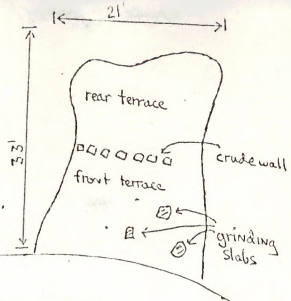
TGE-GNF-4

NA 11,537



TGE-GNF-5

NAD, 53

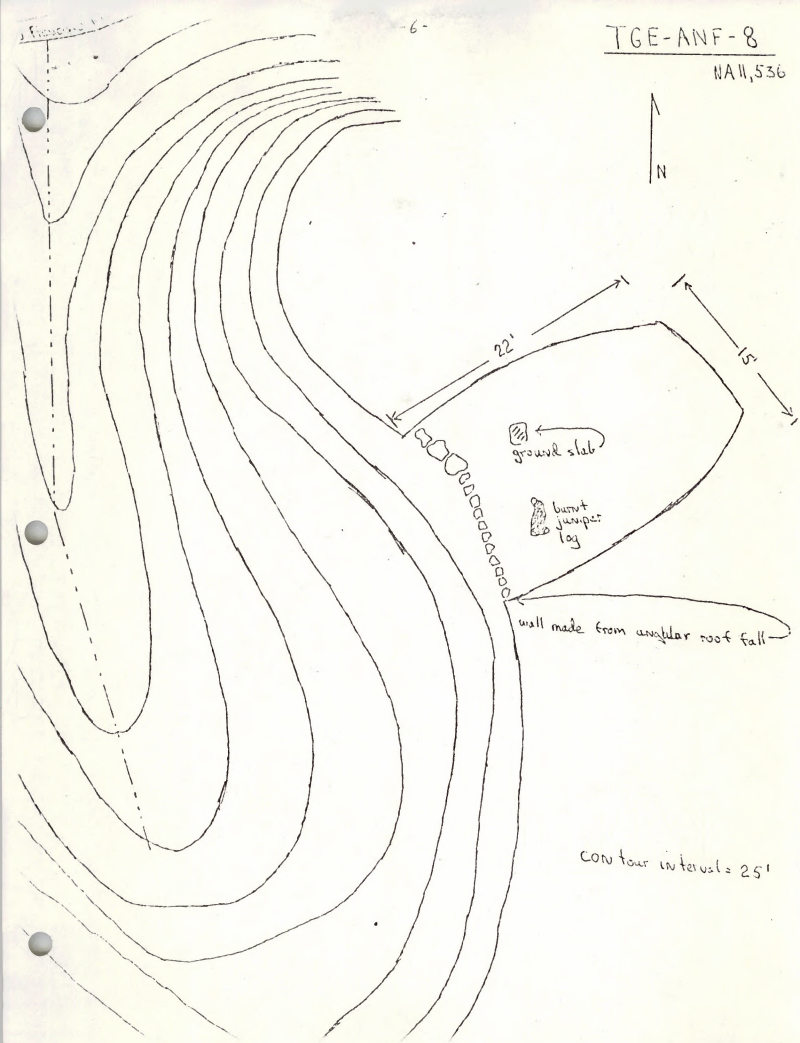


San Francisco River.

contour interval = 2.5'

TGE-ANF-8

NA11,536



MUSEUM OF NORTHERN ARIZONA
DEPARTMENT OF ANTHROPOLOGY

ARCHAEOLOGICAL CLEARANCE INVESTIGATION

TUCSON GAS AND ELECTRIC COMPANY

SAN JUAN-VAIL TRANSMISSION LINE RIGHT-OF-WAY

NEW MEXICO - ARIZONA

Interim Report

for the

Archaeological Survey of Route 1A Right-of-Way

345 KV San Juan-Vail Transmission Line

Apache and Gila National Forests: P.O.T. 4/8 to P.I. 25

Bureau of Land Management and Arizona State Lands

Greenlee County, Arizona and Catron County, New Mexico

Prepared by:

Allen E. Kane
Archaeologist

Revised by:

Steven L. Fuller
Archaeologist

Submitted by:

Alexander J. Lindsay, Jr.
Coordinator of Archaeological Research

December 5, 1972

ABSTRACT: This is the fifth interim report on an archaeological survey made of the Tucson Gas and Electric 345 KV San Juan to Vail Transmission Line in the Apache and Gila National Forests. Seven prehistoric and two historic sites were located in or near the right-of-way and related access roads during this portion of the survey. In this report, evaluations are made concerning the effect of the transmission line construction upon the sites, followed by recommendations for archaeological clearances of listed sections of the right-of-way. The appendices list the recorded sites, their location, description, the related P.O.T. numbers, recommendations, and action taken by TG&E.

INTRODUCTION

The archaeological survey of the right-of-way of the Tucson Gas and Electric 345KV San Juan to Vail Transmission Line was continued by Museum of Northern Arizona archaeologists during the period of July 31 to August 16, 1972. This is the fifth interim report for Gila and Apache National Forests. The line was revisted between October 10 to 14 because of several discrepancies between the original survey and the present right-of-way now panelled. This portion of the survey covered a section of line from Section 21, T.5S, R.31E, Greenlee County, Arizona, north to Section 35, T.5S, R.21W, Catron County, New Mexico. This includes that section of right-of-way between P.I. 25 in the south to P.O.T. 4/8 in the north. Three sites were recorded within the actual right-of-way, and five within 1500 ft. of the right-of-way. One site was found 1 mi. east of the right-of-way. Some sites recorded are next to access roads. (Two sites, TG&E-ANF-1 and TG&E-ANF-2, are discussed in the first interim report on the survey of the Reactor "A" site.) Museum personnel conducting this portion of the survey were archaeologist Allen E. Kane and summer assistants Roger Duewel and Lee Coley. The re-inspection was conducted by Steven L. Fuller.

ARCHAEOLOGICAL CLEARANCE INVESTIGATION
TUCSON GAS AND ELECTRIC COMPANY
SAN JUAN-VAIL TRANSMISSION LINE
NEW MEXICO - ARIZONA

APPENDIX 1

Land Sections	Recommendations
Sect. 36, T.4S, R.31E, AZ.	Not recommended for clearance NA11,501 TG&E-ANF-9
Sect. 22, T.5S, R.31E, AZ.	Recommended for clearance
Sect. 14, T.5S, R.31E, AZ.	Recommended for clearance
Sect. 11, T.5S, R.31E, AZ.	Not recommended for clearance NA11,586 TG&E-ANF-10
Sect. 2, T.5S, R.31E, AZ.	Not recommended for clearance NA11,502 TG&E-ANF-3
Sect. 35, T.4S, R.31E, AZ.	Recommended for clearance
Sect. 34, T.4S, R.31E, AZ.	Not recommended for clearance NA11,513 TG&E-ANF-4
Sect. 26, T.4S, R.31E, AZ.	Not recommended for clearance NA11,514 TG&E-ANF-5
Sect. 22, T.4S, R.31E, AZ.	Recommended for clearance
Sect. 14, T.4S, R.31E, AZ.	Recommended for clearance
Sect. 11, T.4S, R.31E, AZ.	Recommended for clearance
Sect. 12, T.4S, R.31E, AZ.	Recommended for clearance
Sect. 1, T.4S, R.31E, AZ.	Recommended for clearance
Sect. 36, T.3S, R.31E, AZ.	Recommended for clearance
Sect. 25, T.3S, R.31E, AZ.	Recommended for clearance
Sect. 30, T.3S, R.32E, AZ.	Recommended for clearance
Sect. 19, T.3S, R.32E, AZ.	Recommended for clearance
Sect. 18, T.3S, R.32E, AZ.	Recommended for clearance
Sect. 17, T.3S, R.32E, AZ.	Recommended for clearance
Sect. 8, T.3S, R.32E, AZ.	Recommended for clearance

APPENDIX I (cont'd)

Land Sections	Recommendations
Sect. 4, T.3S, R.32E, AZ.	Recommended for clearance
Sect. 33, T.2S, R.32E, AZ.	Recommended for clearance
Sect. 31, T.12S, R.21W, NM	Recommended for clearance
Sect. 30, T.12S, R.21W, NM	Recommended for clearance
Sect. 29, T.12S, R.21W, NM	Recommended for clearance
Sect. 20, T.12S, R.21W, NM	Recommended for clearance
Sect. 17, T.12S, R.21W, NM	Not recommended for clearance NA11,585 TG&E-GNF-60
Sect. 16, T.12S, R.21W, NM	Recommended for clearance
Sect. 9, T.12S, R.21W, NM	Recommended for clearance
Sect. 4, T.12S, R.21W, NM	Recommended for clearance
Sect. 33, T.11S, R.21W, NM	Not recommended for clearance NA11,515 TG&E-GNF-1
Sect. 34, T11S, R.21W, NM	Recommended for clearance
Sect. 27, T.11S, R.21W, NM	Recommended for clearance
Sect. 22, T.11S, R.21W, NM	Not recommended for clearance NA11,516 TG&E-GNF-2
Sect. 15, T.11S, R.21W, NM	Recommended for clearance
Sect. 10, T.11S, R.21W, NM	Recommended for clearance
Sect. 11, T.11S, R.21W, NM	Recommended for clearance
Sect. 2, T.11S, R.21W, NM	Not recommended for clearance NA11,517 TG&E-GNF-3

ARCHAEOLOGICAL CLEARANCE INVESTIGATION
TUCSON GAS AND ELECTRIC COMPANY
SAN JUAN-VAIL TRANSMISSION LINE
NEW MEXICO - ARIZONA

APPENDIX II

A North to South Listing of Right-of-Way Intervals
With Recommendations Concerning Archaeological Clearance

Right-of-Way Intervals	Recommendations
P.O.T. 4/8 to P.I. 5	Recommended for clearance
P.I. 5 to P.I. 6	Recommended for clearance
P.I. 6 to P.I. 7	Recommended for clearance
P.I. 7 to P.O.T. 7/5	Recommended for clearance
P.O.T. 7/5 to P.I. 8	Recommended for clearance
P.I. 8 to P.O.T. 8/1	Recommended for clearance
P.O.T. 8/1 to P.O.T. 8/2	Recommended for clearance
P.O.T. 8/2 to P.O.T. 8/2A	Recommended for clearance
P.O.T. 8/2A to P.O.T. 8/3	Recommended for clearance
P.O.T. 8/3 to P.O.T. 8/4	Recommended for clearance
P.O.T. 8/4 to P.O.T. 8/5	Recommended for clearance
P.O.T. 8/5 to P.O.T. 8/5A	Recommended for clearance
P.O.T. 8/5A to P.O.T. 8/6	Recommended for clearance
P.O.T. 8/6 to P.O.T. 8/7	Recommended for clearance
P.O.T. 8/7 to P.I. 9	Recommended for clearance
P.I. 9 to P.O.T. 9A	Recommended for clearance
P.O.T. 9A to P.O.T. 9/4	Recommended for clearance
P.O.T. 9/4 to P.I. 9/5	Recommended for clearance
P.I. 9/5 to P.I. 9/6	Not recommended for clearance NA11,585 TG&E-GNF-60
P.I. 9/6 to P.I. 9/7	Not recommended for clearance NA11,585 TG&E-GNF-60

APPENDIX II (cont'd)

Right-of-Way Intervals	Recommendations
P.I. 9/7 to P.I. 9/8	Recommended for clearance
P.I. 9/8 to P.I. 9/9	Recommended for clearance
P.I. 9/9 to P.O.T. 9/10	Recommended for clearance
P.O.T. 9/10 to P.O.T. 9/11	Recommended for clearance
P.O.T. 9/11 to P.O.T. 9/12	Recommended for cle-rance
P.O.T. 9/12 to P.I. 9/13	Recommended for clearance
P.I. 9/13 to P.O.T. 9/14	Recommended for clearance
P.O.T. 9/14 to P.O.T. 9/14A	Recommended for clearance
P.O.T. 9/14A to P.I. 9/15	Recommended for clearance
P.I. 9/15 to P.O.T. 10/3-1	Recommended for clearance
P.O.T. 10/3-1 to P.O.T. 10/4	Recommended for clearance
P.O.T. 10/4 to P.O.T. 10/4A	Recommended for clearance
P.O.T. 10/4A to P.O.T. 10/5	Recommended for clearance
P.O.T. 10/5 to P.O.T. 10/5A	Recommended for clearance
P.O.T. 10/5A to P.I. 11	Recommended for clearance
P.I. 11 to P.O.T. 11/1	Recommended for clearance
P.O.T. 11/1 to P.O.T. 11/2	Recommended for clearance
P.O.T. 11/2 to P.I. 12	Recommended for clearance
P.I. 12 to P.O.T. 12A	Recommended for cleearanc
P.O.T. 12A to P.O.T. 12B	Recommended for clearance
P.O.T. 12B to P.O.T. 12/1	Recommended for clearance
P.O.T. 12/1 to P.O.T. 12/2	Recommended for clearance
P.O.T. 12/2 to P.O.T. 12/3	Recommended for clearance
P.O.T. 12/3 to P.I. 13	Recommended for clearance
P.I. 13 to P.O.T. 13/1	Recommended for clearance
P.O.T. 13/1 to P.O.T. 13/2	Recommended for clearance
P.O.T. 13/2 to P.O.T. 13/3	Recommended for clearance

APPENDIX II (cont'd)

Right-of-Way Intervals	Recommendations
P.O.T. 13/3 to P.O.T. 13/4	Recommended for clearance
P.O.T. 13/4 to P.O.T. 13/5	Recommended for clearance
P.O.T. 13/5 to P.O.T. 13/6	Recommended for clearance
P.O.T. 13/6 to P.O.T. 13/7	Recommended for clearance
P.O.T. 13/7 to P.O.T. 13/8	Recommended for clearance
P.O.T. 13/8 to P.O.T. 13/9	Recommended for clearance
P.O.T. 13/9 to P.O.T. 13/9A	Recommended for clearance
P.O.T. 13/9A to P.O.T. 13/9B	Recommended for clearance
P.O.T. 13/9B to P.O.T. 13/9C	Recommended for clearance
P.O.T. 13/9C to P.I. 14	Recommended for clearance
P.I. 14 to P.O.T. 14/1	Recommended for clearance
P.O.T. 14/1 to P.O.T. 14/1-1	Recommended for clearance
P.O.T. 14/1-1 to P.O.T. 14/2	Recommended for clearance
P.O.T. 14/2 to P.O.T. 14/3	Recommended for clearance
P.O.T. 14/3 to P.O.T. 14/4	Recommended for clearance
P.O.T. 14/4 to P.O.T. 14/5	Recommended for clearance
P.O.T. 14/5 to P.O.T. 14/6	Recommended for clearance
P.O.T. 14/6 to P.O.T. 14/7	Recommended for clearance
P.O.T. 14/7 to P.O.T. 14/8	Recommended for clearance
P.O.T. 14/8 to P.O.T. 14/9	Recommended for clearance
P.O.T. 14/9 to P.O.T. 14/10	Recommended for clearance
P.O.T. 14/10 to P.O.T. 14/11	Recommended for clearance
P.O.T. 14/11 to P.O.T. 14/12	Recommended for clearance
P.O.T. 14/12 to P.O.T. 14/12A	Recommended for clearance
P.O.T. 14/12A to P.I. 15	Recommended for clearance
P.I. 15 to P.O.T. 15/1	Recommended for clearance

APPENDIX II (cont'd)

Right-of-Way Intervals	Recommendations
P.O.T. 15/1 to P.O.T. 15/2	Recommended for clearance
P.O.T. 15/2 to P.O.T. 15/3	Recommended for clearance
P.O.T. 15/3 to P.I. 16	Recommended for clearance
P.I. 16 to P.O.T. 16/1	Recommended for clearance
P.O.T. 16/1 to P.O.T. 16/2	Recommended for clearance
P.O.T. 16/2 to P.I. 17	Recommended for clearance
P.I. 17 to P.O.T. 17/1	Recommended for clearance
P.O.T. 17/1 to P.O.T. 17/2	Recommended for clearance
P.O.T. 17/2 to P.O.T. 17/3	Recommended for clearance
P.O.T. 17/3 to P.O.T. 17/4	Recommended for clearance
P.O.T. 17/4 to P.O.T. 17/4A	Recommended for clearance
P.O.T. 17/4A to P.I. 18	Recommended for clearance
P.I. 18 to P.O.T. 18/1	Recommended for clearance
P.O.T. 18/1 to P.O.T. 18/2	Not recommended for clearance NA11,513 TG&E-ANF-4
P.O.T. 18/2 to P.O.T. 18/3	Recommended for clearance
P.O.T. 18/3 to P.O.T. 18/4	Recommended for clearance
P.O.T. 18/4 to P.O.T. 18/5	Recommended for clearance
P.O.T. 18/5 to P.O.T. 18/6	Recommended for clearance
P.O.T. 18/6 to P.I. 19	Recommended for clearance
P.I. 19 to P.O.T. 19/1	Recommended for clearance
P.O.T. 19/1 to P.I. 20	Recommended for clearance
P.I. 20 to P.O.T. 20/1	Recommended for clearance
P.O.T. 20/1 to P.O.T. 20/2	Recommended for clearance
P.O.T. 20/2 to P.I. 21	Not recommended for clearance NA11,586 TG&E-ANF-10
P.I. 21 to P.O.T. 21/1	Not recommended for clearance NA11,586 TG&E-ANF-10

APPENDIX II (cont'd)

Right-of-Way Intervals	Recommendations
P.O.T. 21/1 to P.O.T. 21/2	Recommended for clearance
P.O.T. 21/2 to P.I. 22	Recommended for clearance
P.I. 22 to P.O.T. 22/1	Recommended for clearance
P.O.T. 22/1 to P.O.T. 22/2	Recommended for clearance
P.O.T. 22/2 to P.O.T. 22/3	Recommended for clearance
P.O.T. 22/3 to P.I. 23	Recommended for clearance
P.I. 23 to P.O.T. 23/1	Recommended for clearance
P.O.T. 23/1 to P.O.T. 23/2	Recommended for clearance
P.O.T. 23/2 to P.I. 24	Recommended for clearance
P.I. 24 to P.I. 24A	Recommended for clearance
P.I. 24A to P.O.T. 24A/1	Recommended for clearance
P.O.T. 24A/1 to P.I. 24B	Recommended for clearance
P.I. 24B to P.I. 25	Recommended for clearance

ARCHAEOLOGICAL CLEARANCE INVESTIGATION
TUCSON GAS AND ELECTRIC COMPANY
SAN JUAN-VAIL TRANSMISSION LINE
ARIZONA - NEW MEXICO

APPENDIX III

Inventory, Location, Description, Recommendations, and Actions
Taken for Sites Situated In or Near
The Proposed Transmission Line Right-of-Way

SITE: NA11,501 TG&E-ANF-9 (Black Jack Cave)

LOCATION: T.4S, R.31E, Section 36, NE¼ of SW¼; approximately 6000 ft. east of the proposed right-of-way at P.O.T. 18-3.

DATE: Prehistoric (ca. A.D.800-1000) possibly with an earlier component

DESCRIPTION: The site is located in Black Jack Cave, actually a rock shelter, at the base of the southern wall of Black Jack Canyon. The floor of the rock shelter contains about 2.0 m. of cultural deposits which also extend on to the talus slope in front of the cave. The deposits contain a small scattering of sherds, obsidian chips, stone spalls, corncobs, and bone refuse. Other evidence of use of the rock shelter by prehistoric inhabitants include pictographs on the east wall of the cave, and bedrock mortars, both in the cave and in rock next to Black Jack Creek approximately 100 yds. downstream. There is no evidence of architectural structures on the site; however, remnants may have been destroyed by the activities of illegal excavators, who have very badly damaged the site. The site is important archaeologically because it provides evidence as to the nature of the prehistoric occupation of the area. In as much as this is a cave site, artifactual evidence is probably better preserved here than at open sites in the area. In addition, many caves were often inhabited

APPENDIX III (cont'd)

for long periods of time. There is no conclusive evidence to indicate an exact time phase for this particular cave; however, the pictographs on the east wall are indicative of an early occupation in other areas of the Southwest.

RECOMMENDATION: Protect. As the site is more than 1 mi. from the proposed right-of-way, it will not be disturbed by construction. However, the site is very obvious, and should be protected from the actions of souvenir hunters and vandals.

ACTION BY TG&E: Avoid and protect.

SITE: NA11,502 TG&E-ANF-3

LOCATION: T.5S, R.31E, Section 2, SW¼ of NW¼

P.O.T. 1100 ft. west (perpendicular) of P.O.T. 18/6

DATE: Historic (ca A.D.1920-1950)

DESCRIPTION: The site is the remains of a cabin placed on the first stream terrace approximately 175 m. north of the confluence of Black Jack Creek and an unnamed tributary. The remnants consist of two stone walls or foundations and a corner, now reduced to two rubble piles, one 5.0 m. long, and one 3.0 m. long. Historic trash is scattered around the walls and in a flat area to the west of the rubble, extending about 15 m. A washed-out bulldozed jeep road formerly connected the site with State Road 78, approximately 800 m. to the north.

RECOMMENDATION: Flag and protect. The site is not very close to the right-of-way, but a possible access road to the right-of-way passes through the site area. The site should be protected against damage by construction crews and equipment.

APPENDIX III (cont'd)

ACTION BY TG&E: Flag and protect.

SITE: NA11,513 TG&E-ANF-4

LOCATION: T4S, R31E, Section 34, NE¼ of NE¼. Greenlee County, Arizona.

P.O.T.: 18-2 to 18-1

DATE: Prehistoric (ca A.D.900-1100)

DESCRIPTION: North of P.O.T. 18-2 on an interfluvial ridge there is an apparent habitation site located near the south bank of Rustler's Canyon. The east boundary of the site is approximately on the east boundary of the proposed right-of-way. The west boundary of the site extends 1000 ft. west of the centerline. The core area of the site, a sherd and lithic scatter on the south bank of Rustler's Canyon, measures 100 ft. by 150 ft. Surrounding this area to the south, east, and west is an extensive quarry area. This is marked by abundant deposits of a volcanic rock that appears to be acceptable for tool-making material. Scattered through these deposits are numerous examples of partially made tools and general lithic debitage. No living or other structures are evident; however, the soil below the sherd and lithic scatters appears deep enough to conceal such structures. The site provides an important archaeological record as to the prehistoric occupation of the area.

RECOMMENDATION: Flag and protect. This site is in the right-of-way and the only access road in the area runs across the south edge of the site. The site should be protected against construction crews and equipment.

ACTION BY TG&E: Flag and protect.

APPENDIX III (cont'd)

SITE: NA11,586 TG&E-ANF-10

LOCATION: T5S, R31E, Section 11, NE¼ of SE¼. Greenlee County, Arizona.

P.O.T.: P.I. 21

DATE: Prehistoric

DESCRIPTION: On a small interfluvial tongue at P.I. 21 there is a lithic concentration extending approximately 200 ft. north to south and 100 ft. east to west. The site is situated approximately 300 ft. west of the Apache National Forest boundary fence. The interfluve upon which the site is located slopes gently, less than 5 per cent, to the west. To the north of the site is Lop Ear Creek and to the south is an unnamed tributary. There is a confluence of these two drainages 300 ft. west of the site. The artifact assemblage collected at the site consisted of several projectile points, numerous utilized flakes, and a moderate quantity of lithic debitage. No evidence of structures or permanent habitation exist at the site, but the nature of the heavy sediments on this terrace would enable vast archaeological resources to be present but not readily visible on the surface. Therefore, this site is considered potentially valuable towards the better understanding of the prehistory of this region and must not be destroyed.

RECOMMENDATIONS: Flag and protect. The immediate area around P.I. 21 should be avoided by construction activities; however, the area within 500 ft. of the P.I. 21, excluding the site, has been cleared by archaeologists for construction activities.

ACTION BY TG&E: Flag and protect.

APPENDIX III (cont'd)

SITE: NA11,514 TG&E-ANF-5

LOCATION: T.4S, R.31E, Section 26, NW¼ of NW¼ and NW¼ of SW¼ P.O.T. Area A (homestead) is 1300 ft. east of Right-of-way point 1000 ft. south of P.O.T. 17/2

Area B (line shack) is 1300 ft. east of right-of-way point 500 ft. north of P.I. 18.

DATE: Historic (ca A.D.1910-1970)

DESCRIPTION: NA11,514 is a homestead located next to a spring in the valley of a small tributary of Rustler's Canyon. The homestead consists of a two-room cabin measuring 15 by 30 ft., a corral, a storage shed, a retaining wall, and a small trash dump. An unuseable pipeline connects the homestead to Rustler's Spring, 300 m. to the east. In addition, a line shack or cow camp is located 1500 ft. downstream, undoubtedly used by the homesteaders. The main homestead cabin is in excellent condition with walls, windows, and furnishings intact; however, the line shack has collapsed.

RECOMMENDATION: Protect. The site is relatively distant from the right-of-way. However, it is conspicuous and must be protected from vandals and souvenir hunters. The homestead is presently in excellent condition, and provides a valuable archaeological example of historical homesteading in the area as long as it remains unmolested.

ACTION BY TG&E: Avoid and protect.

SITE: NA11,585 TG&E-GNF-60

P.O.T.: F/9-5 to F/9-7

DATE: Undetermined

DESCRIPTION: Existing in a saddle and extending southwest onto a

APPENDIX III (cont'd)

remnant high terrace above the floor of the San Francisco River canyon, this probable camp runs well into the western margin of the presently proposed right-of-way. Currently, protective soil and floral cover on the site is sufficiently thin so as not to provide sufficient component stabilization. As a result, sheetwash and incipient gullying at the locality's northeast margin is producing some horizontal movement of artifactual material in a southerly direction.

RECOMMENDATION: Flag and protect. The portion of NA11,585 existing within the right-of-way does so on a rather steep slope. The remainder of the site is situated above P.O.T. F/9-6 on a flat terrace remnant. In the first instance, corridor traffic in this immediate vicinity would certainly hasten site destruction through soil erosion. Secondly, flat topography provided by the remnant terrace is an ideal staging location for construction and related activities along this sector of Route 1-A. Under no circumstances should this be permitted. Precious little cover soil exists over local bedrock, and that matrix is inordinately high in vesicular basalt inclusives. In this vein, surface traffic of even moderate amount would surely be deleterious to the site--regardless of diminished topographic grade.

ACTION BY TG&E: Flag and protect.

SITE: NA11,515 TG&E-GNF-1

LOCATION: T.11S, R.21W, Section 33, NW¼

P.O.T.: 3000 ft. Northwest of P.I. 7

DATE: Prehistoric (ca. A.D.900-1100)

APPENDIX III (cont'd)

DESCRIPTION: NA11,515 is a one-unit pit house habitation or camp site located on a sloping surface near the Smoothing Iron cattle camp and more distant from the J-Lazy H tank. The site consists of one room amrked by masonry rubble about 10 by 10 m., and surrounded by a sherd scatter. The site is in fairly good condition.

RECOMMENDATION: Protect. The site, although not conspicuous, can be readily seen, and could be vandalized if traffic or visitation to the area becomes more frequent.

ACTION BY TG&E: Avoid and protect.

SITE: NA11,516 TG&E-GNF-2

LOCATION: T.11S, R.21W, Section 22 NE¼ of SW¼ (New Mexico)

P.O.T.: 2500 ft. west (perpendicular) of P.I. 6

DATE: Prehistoric (ca. A.D.1000-1200)

DESCRIPTION: The site is a large pueblo located on a small hill between two minor tributaries of Snare Canyon. The site consists of two large room blocks, a courtyard, a possible tower, and a large trash scatter. It is impossible to determine whether the room blocks contained two-story rooms without excavation, but the north room block contains approximately 20 ground story rooms, while the south block contains about 30 rooms. The room blocks are separated by a rectangular courtyard measuring 25 by 30 m. and outlined by vertical slabs. The possible tower is located in the southwest corner of the courtyard. A large trash area extends south and east of the southern room block. Overall extent of the site is 70 m. north-south and 60 m. east-west. The site is very important archaeologically in that it

APPENDIX III (cont'd)

is probably the largest site in the area west of the San Francisco River, and, as such, probably functioned as a center of various activities. In that the site is a pueblo instead of a pit house village, it could furnish much evidence on the nature of the late prehistoric occupation of the area. The site already has been damaged by indiscriminate chaining and further harm must be prevented.
RECOMMENDATIONS: Protect. The site is about 2500 ft. from the proposed right-of-way and, therefore, should not be harmed by construction activities. However, it is a very large and conspicuous site, and must be protected against souvenir hunters and vandals.
ACTION BY TG&E: Avoid and protect.

SITE: NA11,517 TG&E-GNF-3
LOCATION: T11S, R.21W, Section 2, SW¼ of SW¼
P.O.T.: 750 ft. west (perpendicular) of the right-of-way at a point 5100 ft. north of P.I. 5
DATE: Prehistoric (ca. A.D.1000-1200)
DESCRIPTION: The site is a small habitation situated on the end of a small ridge between two minor drainages. The site consists of several low concentrations of rubble, probably representing two or three pit houses or other living structures. and a scattering of sherds and lithic debris. The extent of the site is 30 by 20 m. The site is important in an archaeological sense in that it provides another example of patterning and life habits of prehistoric individuals living at small habitation sites in the area.
RECOMMENDATION: Flag and protect. The site is very close to the

APPENDIX III (cont'd)

right-of-way, and just east of an access road leading to the west side of Snare Canyon. Hence, the site must be protected against heavy machinery and other construction activities, as well as vandalism.

ACTION BY TGQE: Flag and protect.

T65-AAE-3

N

0 50 100 150 FT

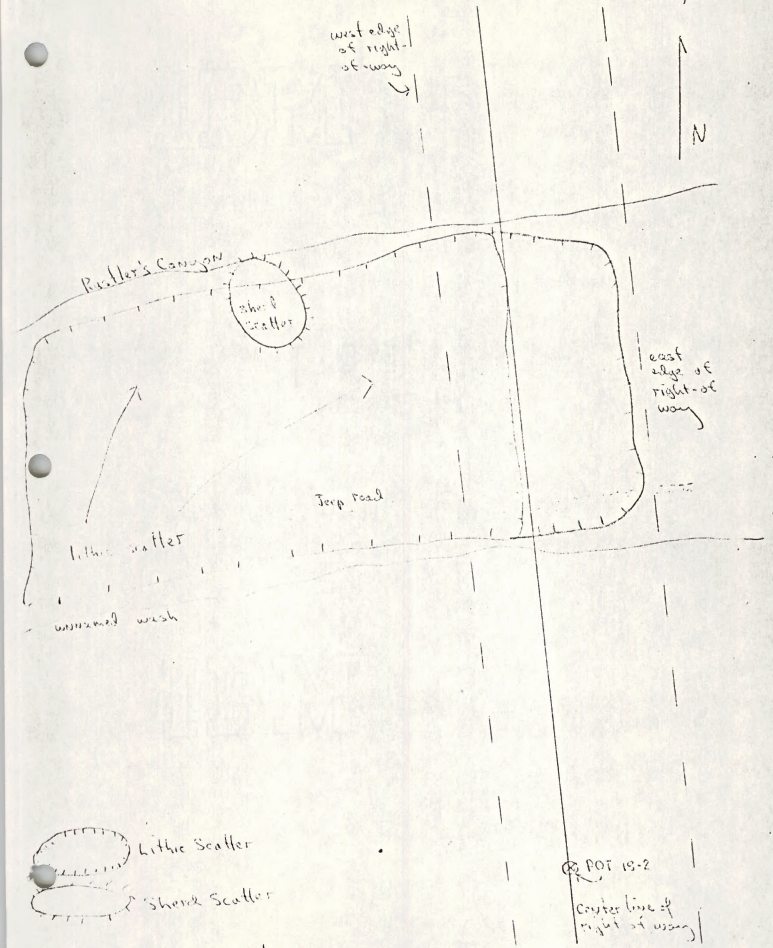
JEEP ROAD

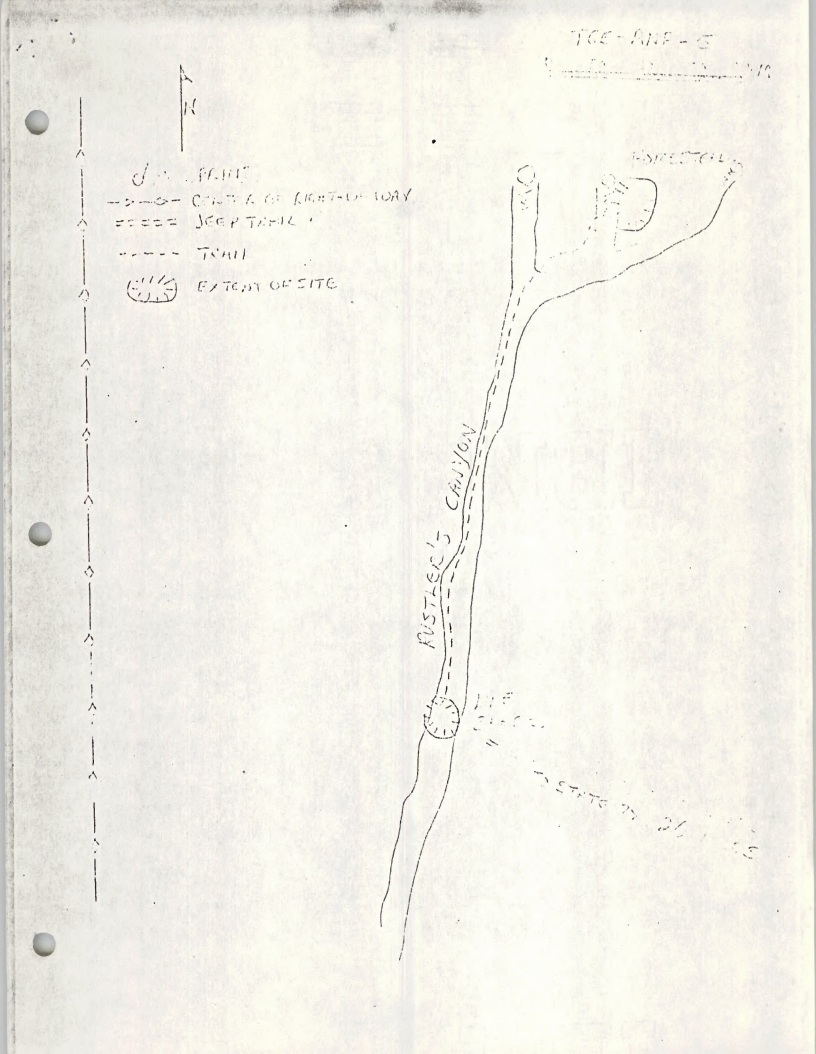
RIGHT-OF-WAY CENTER LINE

CATCH BASIN

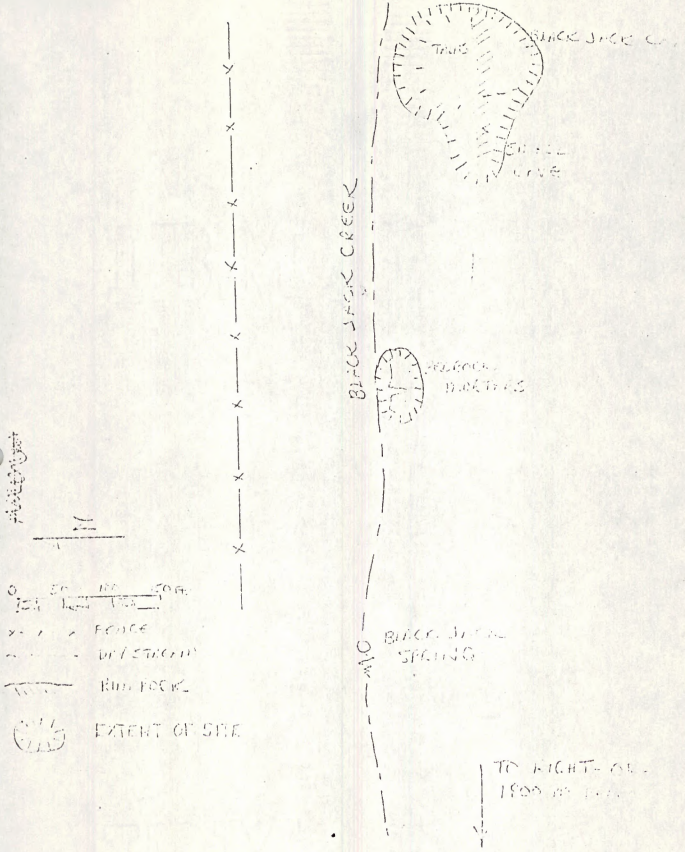
TGE-ANF-4

NA 11,513



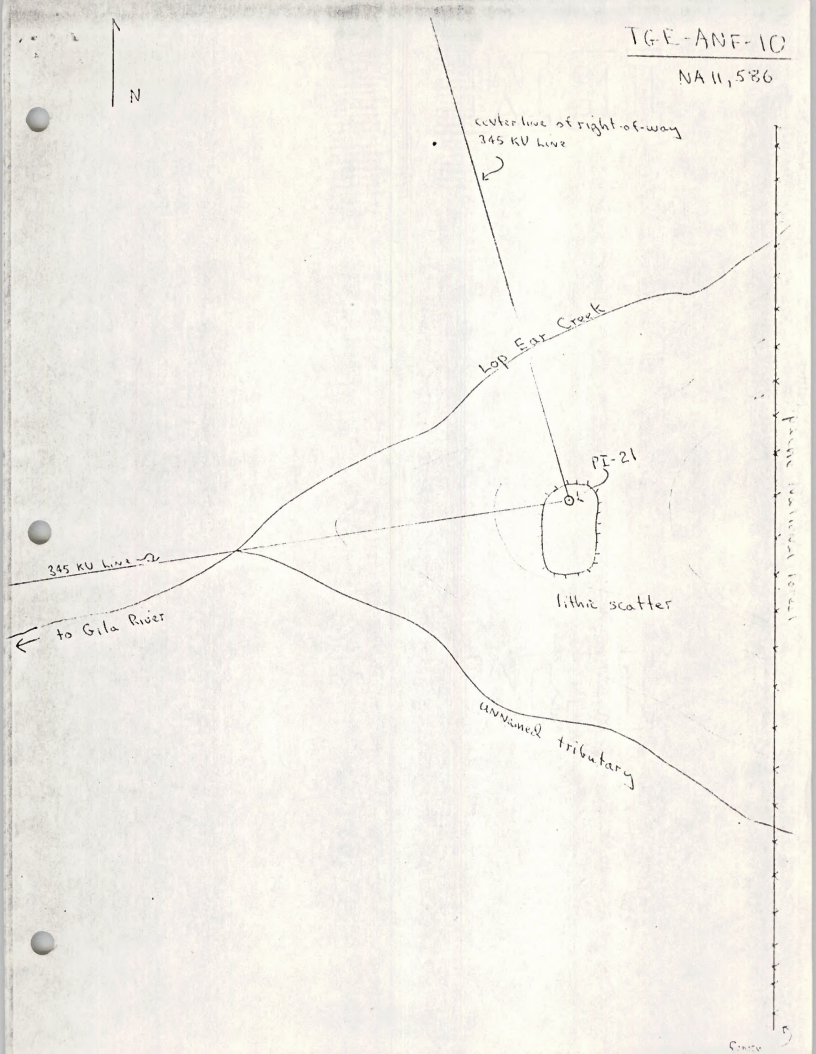

N
PLANT
CENTER OF RIGHT-OF-WAY
JEEP TRAIL
TRAIL
EXTENT OF SITE
RUSTLER'S CANYON

TGE-ANF-4



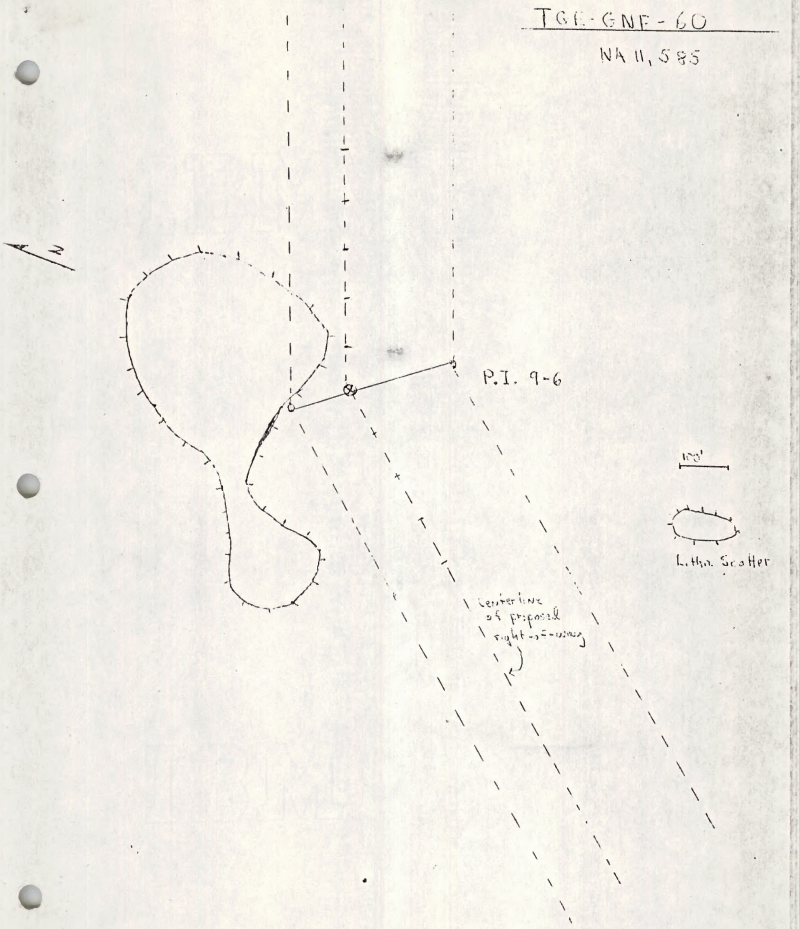
TGE-ANF-10

NAU,586



TGE-GNF-60

NA 11, 585



TGE-GNF-1

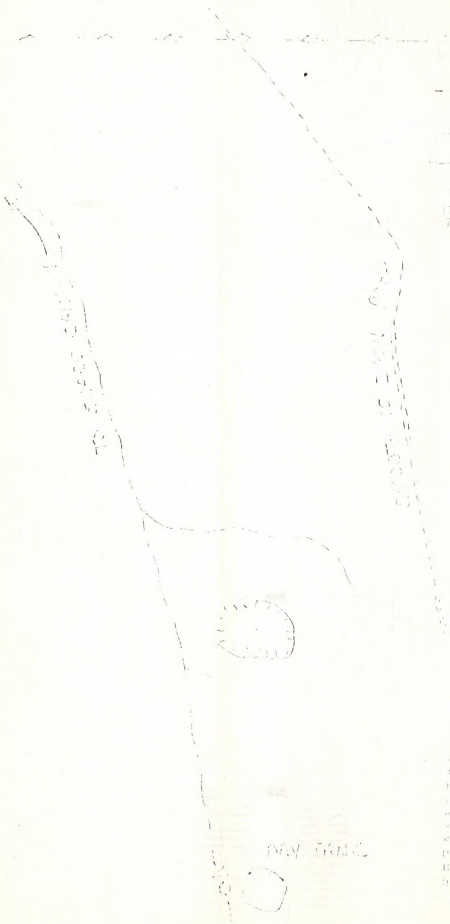
JEEP TRAIL

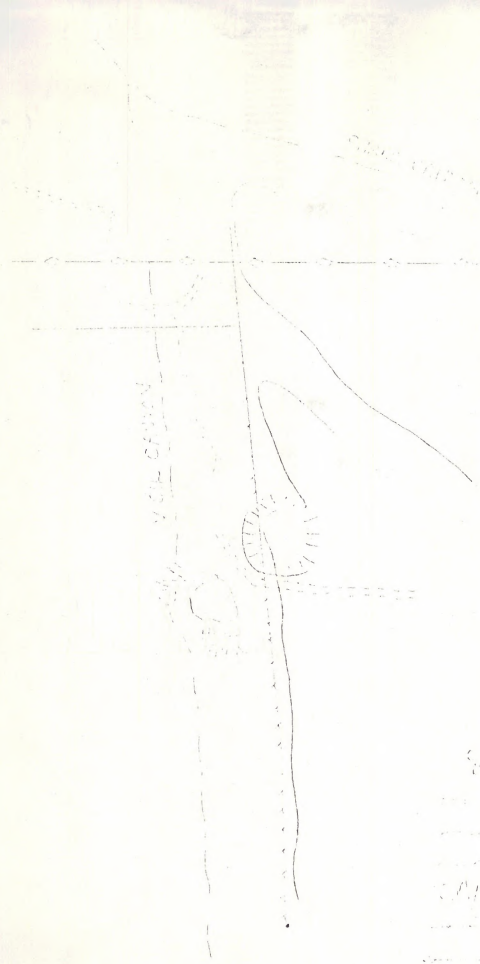
TRAIL

CREEK

FENCE

LIMITS OF SITE





MUSEUM OF NORTHERN ARIZONA
DEPARTMENT OF ANTHROPOLOGY

ARCHAEOLOGICAL CLEARANCE INVESTIGATION

TUCSON GAS AND ELECTRIC COMPANY

SAN JUAN-VAIL TRANSMISSION LINE RIGHT-OF-WAY

NEW MEXICO - ARIZONA

Interim Report

for the

Archaeological Survey of Route 1-A Right-of-Way

North of the San Francisco River: P.O.T. G/36 to P.O.T. 4/8

345 KV San Juan-Vail Transmission Line

Gila and Apache National Forests

Catron County, New Mexico

Prepared by:

Steven L. Fuller
Archaeologist

Submitted by:

Alexander J. Lindsay, Jr.
Coordinator of Archaeological Research

December 5, 1972

ABSTRACT: This interim report is on that section of right-of-way of Route 1-A that stretches north from Keller Canyon, T10S, R21W, Section 35, to P.O.T. G/36, at Brushy Well, T8S, R20W, Section 32. Also included in this report is the survey of an additional 5 mi. of relocation between P.I. #3 and P.I. G/50. All locations referred to in this report are in Catron County, New Mexico. Presented here is a total site tabulation with recommendations concerning right-of-way clearance for establishing and maintaining the powerline in question. That listing is supported by three appendices: the first relates relevant material encountered to specific P.O.T. intervals involved, the second describes specific sites, and the last positions localities to be avoided within their proper township, range, and section.

INTRODUCTION

This third interim report on a portion of the Gila and Apache National Forests describes the survey conducted between Keller Canyon and Brushy Well for the proposed TG&E 345 KV Transmission Line Right-of-Way.

That portion of Route 1-A between P.O.T. 4/4 (Keller Canyon) and P.O.T. G/36 (Brushy Well) is approximately 13 mi. long. Located in or near the 330 ft. right-of-way along this portion of the line were two prehistoric sites. However, an additional 5 mi. was surveyed when Route 1-A was relocated between P.I. #3 and P.I. G/50. This relocation will be referred to as Route 1-A (2). No sites were found along this relocation.

Portions of 15 sections and 4 townships were inspected during the course of the survey. These are (from south to north): T10S, R21W, Sections 36, 35, 25, 24, 13, T10S, R20W, Sections 6, 7, 18, T9S, R20W, Sections 6, 7, 18, 19, 30, 31, T8S, R20W, Section 32. All proveniences can be found on USGS 15 ft. quad sheets; Alma, New Mexico and Saliz Pass, New Mexico.

RECOMMENDATIONS

The below is a sequential listing of P.O.T. designations within the Gila and Apache National Forest right-of-way as assigned by Koogle and Pouls Engineering, Inc. Accompanying that north to south chronology are recommendations for archaeological clearance.

GILA NATIONAL FOREST

P.O.T.	Recommendation
G/36 to G/37	Recommended for clearance
G/37 to G/38	Recommended for clearance
G/38 to G/39	Recommended for clearance
G/39 to G/40	Recommended for clearance
G/40 to G/41	Recommended for clearance
G/41 to G/42	Recommended for clearance
G/42 to G/43	Recommended for clearance
G/43 to G/44	Recommended for clearance
G/44 to G/45	Recommended for clearance
G/45 to G/46	Recommended for clearance
G/46 to G/47	Recommended for clearance
G/47 to G/48	Recommended for clearance
G/48 to G/49	Recommended for clearance
G/49 to G/50	Recommended for clearance

APACHE NATIONAL FOREST

G/50 to G/100	Recommended for clearance
G/100 to G/101	Recommended for clearance

P.O.T.	Recommendation
G/101 to G/102	Recommended for clearance
G/102 to G/103	Recommended for clearance

GILA NATIONAL FOREST

G/103 to G/104	Recommended for clearance
G/104 to G/105	Recommended for clearance
G/105 to G/106	Recommended for clearance
G/106 to P.I.#3	Recommended for clearance
P.I.#3 to 3/1	Recommended for clearance
3/1 to 3/2	Recommended for clearance
3/2 to 3/3	Recommended for clearance
3/3 to 3/4	Recommended for clearance
3/4 to 3/5	Recommended for clearance
3/5 to 3/6	Recommended for clearance
3/6 to 3/7	Recommended for clearance
3/7 to 3/8	Recommended for clearance
3/8 to P.I.#4	Recommended for clearance
P.I.#4 to 4/1	Recommended for clearance
4/1 to 4/2	Recommended for clearance
4/2 to 4/3	Recommended for clearance
4/3 to 4/4	Recommended for clearance
4/4 to 4/5	Recommended for clearance
4/5 to 4/6	Recommended for clearance
4/6 to 4/7	Recommended for clearance
4/7 to 4/8	Recommended for clearance

OLD RIGHT-OF-WAY ALIGNMENT

P.O.T.	Recommendation
G/50 to G/51	Recommended for clearance
G/51 to G/52	Recommended for clearance
G/52 to G/53	Recommended for clearance
G/53 to G/54	Recommended for clearance
G/54 to G/55	Recommended for clearance
G/55 to G/56	Not recommended for clearance NA11,540 TG&E-ANF-7
G/56 to 2/1	Not recommended for clearance NA11,540 TG&E-ANF-7
2/1 to 2/2	Not recommended for clearance NA11,539 TG&E-ANF-6
2/2 to 2/3	Recommended for clearance
2/3 to 2/4	Recommended for clearance
2/4 to 2/5	Recommended for clearance
2/5 to 2/6	Recommended for clearance
2/6 to 2/7	Recommended for clearance
2/7 to 2/8	Recommended for clearance
2/8 to 2/9	Recommended for clearance
2/9 to 2/10	Recommended for clearance
2/10 to 2/11	Recommended for clearance
2/11 to 2/12	Recommended for clearance
2/12 to P.I.#3	Recommended for clearance

ARCHAEOLOGICAL CLEARANCE INVESTIGATION
TUCSON GAS AND ELECTRIC COMPANY
SAN JUAN-VAIL TRANSMISSION LINE RIGHT-OF-WAY

APPENDIX I

Index of Archaeological Sites Located in the Apache National Forest
Between P.O.T. 4/4 and P.O.T. G/36

P.O.T.	Field No.	Site No.
G/55 to 2/1 (old alignment)	TG&E-ANF-7	NA11,540
2/1 to 2/2 (old alignment)	TG&E-ANF-6	NA11,539

ARCHAEOLOGICAL CLEARANCE INVESTIGATION
TUCSON GAS AND ELECTRIC COMPANY
SAN JUAN-VAIL TRANSMISSION LINE

APPENDIX II

Inventory, Description and Recommendations for Sites
Situated In or Near the Proposed 330 ft. Right-of-Way.

SITE: NAH,539 TG&E-ANF-6

P.O.T.: 2/1 (old alignment)

DATE: Prehistoric

DESCRIPTION: Site situated on slightly sloping south terrace of Pueblo Creek. Terrace slopes less than 5 per cent to the northeast towards the canyon of the creek. A light concentration of lithic material was found just west of P.O.T. 2/1. The concentration was confined in a circle with a 60 ft. diameter. The east edge of the site is approximately 60 ft. west of the P.O.T. panel, while the west edge of the site is 120 ft. west of the P.O.T. A 100 per cent sample of the site's surface yielded a handful of non-utilized lithic flakes. No other indications of site configuration were found by the archaeologists.

RECOMMENDATIONS: Flag and protect.

ACTION BY TG&E: Right-of-way changed; site avoided.

SITE: NAH,540 TG&E-ANF-7

P.I.: G/56 (old alignment)

DATE: Prehistoric, Mogollon IV-V (ca. 1000-1100)

DESCRIPTION: Site situated on slightly sloping north terrace of Pueblo Creek. The terrace slopes less than 5% to the southwest towards the canyon of Pueblo Creek. A

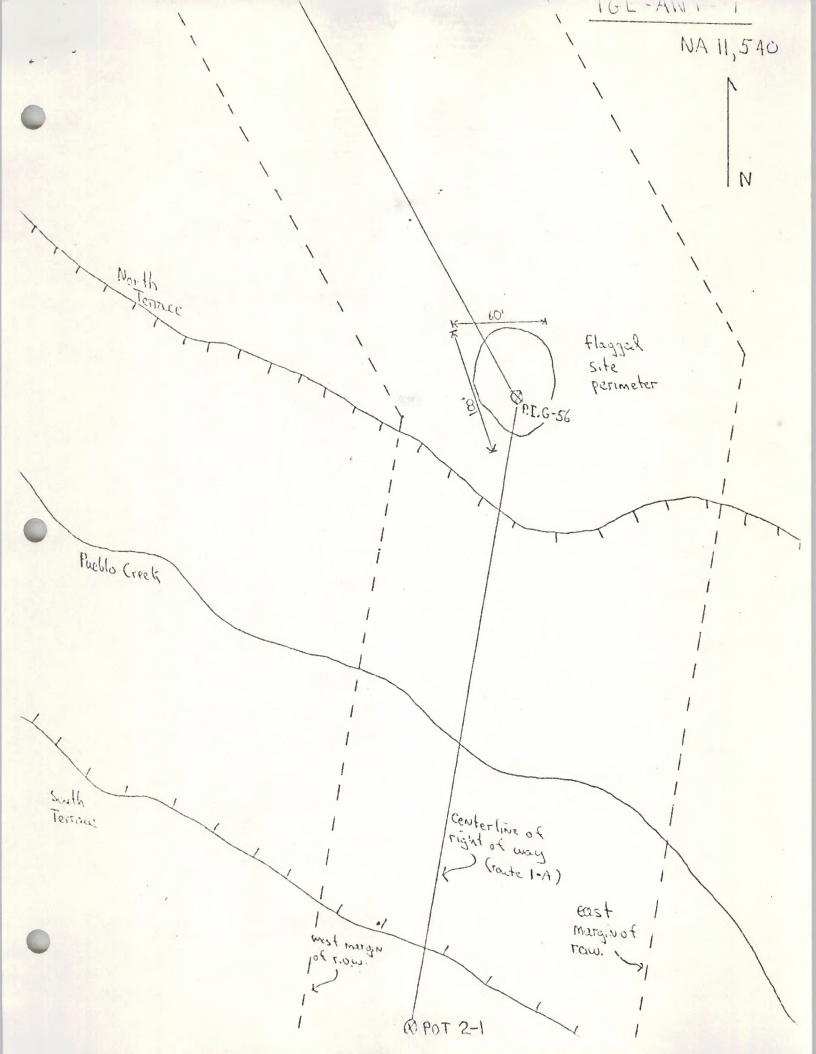
light concentration of material, both lithic and ceramic, was found in the vicinity of P.I. G/56. The concentration was enclosed by an oval 100 ft. north-south by 60 ft. east-west. No material was found outside this outline at the time of the reconnaissance. The P.I. is located in the southeast quadrant of the site. The 100 per cent surface collection of 27 sherds and 5 lithic flakes was all that could be observed of site configuration. No buried features are even partially evident and no cobbles from above the ground structures were observed in the general area of the site.

RECOMMENDATION: Flag and protect.

ACTION BY TG&E: Right-of-way changed; site avoided.

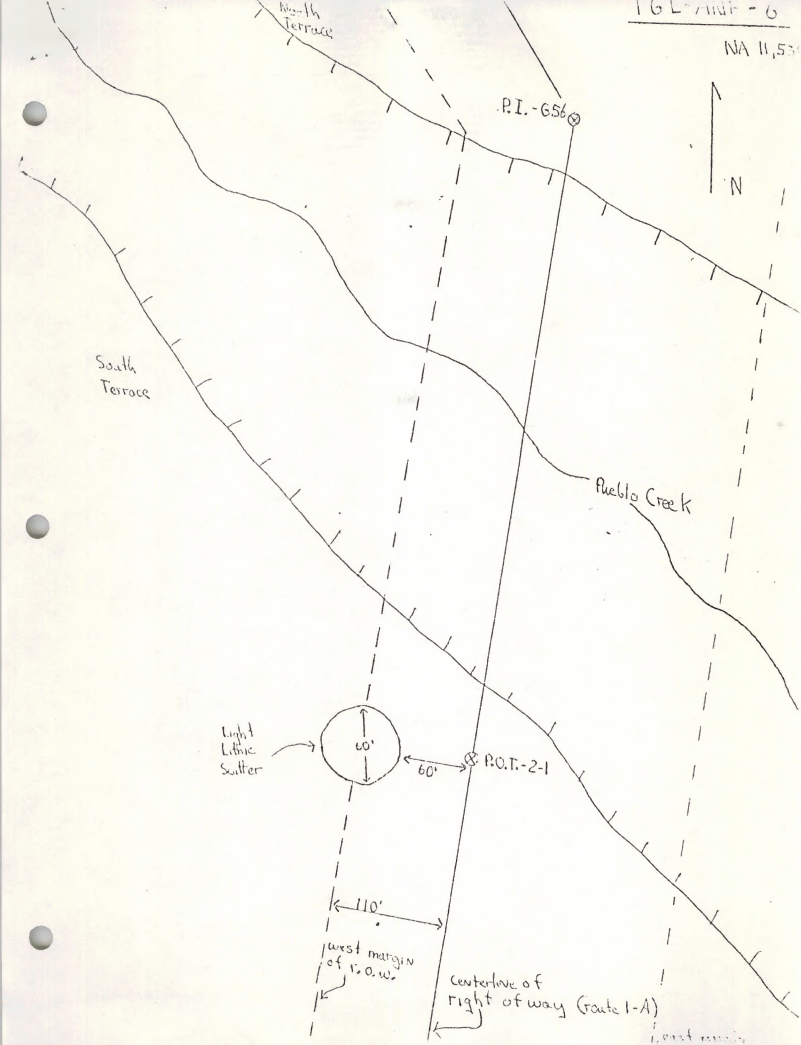
TGL-ANT-1

NA 11,540



TGL 7117 - 6

NA 11,5



ARCHAEOLOGICAL CLEARANCE INVESTIGATION
TUCSON GAS AND ELECTRIC COMPANY
SAN JUAN-VAIL TRANSMISSION LINE

APPENDIX III

MAP Reference to Sites Located In or Near the Proposed
330 ft. Right-of-Way of Route IA

SITE:	MAP	TOWNSHIP	RANGE	SECTION
TG&E-ANF-6	USGS 15'-Alma, N.M.	T9S	R20W	30, SW¼SE¼
TG&E-ANF-7	USGS 15'-Alma, N.M.	T9S	R20W	30, NW¼SE¼

MUSEUM OF NORTHERN ARIZONA
DEPARTMENT OF ANTHROPOLOGY

ARCHAEOLOGICAL CLEARANCE INVESTIGATION

TUCSON GAS AND ELECTRIC COMPANY

SAN JUAN-VAIL TRANSMISSION LINE RIGHT-OF-WAY

NEW MEXICO - ARIZONA

Interim Report

for the

Archaeological Survey of Route 1-A Right-of-Way

Apache and Gila National Forests (Reserve District): P.O.T. F/103 to G/36

345 KV San Juan-Vail Transmission Line

Apache and Gila National Forests

Catron County, New Mexico

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ABSTRACT: This interim report on the Pine Lawn Valley and surrounding vicinity of the Gila and Apache National Forests (GNF and ANF) constitutes a continuance by the Museum of Northern Arizona in archaeological clearance of the San Juan-Vail proposed 345 KV powerline right-of-way for the Tucson Gas and Electric Company. In this vein, a corridor occasionally in excess of 330 ft. wide extending from P.O.T. F/103 to P.O.T. G/36 was surveyed. That interval of the Route 1-A transect exists wholly within the Reserve district of national forest land, it is both physiographically and biotically distinct from that to the north, and came to include a minimum of 15 prehistoric sites. This statement addresses immediately relevant general aspects of the physical environment, tabulates associated sites, and consequently, offers recommendations concerning right-of-way clearance for establishment and maintenance of the powerline. That listing is supported by three appendices: the first relates relevant material encountered to specific P.O.T. intervals involved, the second describes discrete sites and elucidates on recommendations for disposition, and the last positions localities to be avoided within their proper township, range, and section. A final addendum is presented in general discussion of localities here felt to pose engineering problems.

INTRODUCTION

This second interim report concerns that portion of the Tucson Gas and Electric Company (TG&E) proposed right-of-way between P.O.T. F/103 and P.O.T. G/36. That interval of Route 1-A is almost entirely within the Gila National Forest (Reserve district), and covers approximately 13.5 linear mi. between the westernmost extension of the San Francisco Mountains south to the southeastern slopes of Brushy Mountain. Within that distance 15 archaeological sites (NA11,570 - NA11,584) were located in or immediately adjacent to the powerline corridor.

Sites situated in this region fall within noticeably different environmental circumstances than those to the north. These differences are reflected in the various archaeological assemblages encountered, and have a definite bearing on potentialities of component preservation. South of the San Francisco Mountains the more northerly

Colorado Plateau gives way to the Mexican Highland section of the Basin and Range physiographic province. This morphological change is accompanied by a drop in elevation, a slight reduction in topographic relief, moderate climatic amelioration, a change in drainage pattern, and sporadic alteration in pedogenesis. Each of these factors have had a consequent effect on plant associations. The lower montane coniferous forest community associated with the Datil section of the Colorado Plateau is replaced by a blending of Woodland and Floodplain Forest communities. More pointedly, Route 1-A transects a medium to low canopy woodland region of alternating oak-juniper and pinyon-juniper communities. This cover presently thins out toward the south into a pasture grassland in the vicinity of middle and lower Pueblo Creek immediately north of Alma, New Mexico. In perspective, this larger zone is an interdigitating ecotone exhibiting a floodplain forest biotic community of mature to old cottonwood-willow forest. These latter intruders occupy the many east-west dissecting stream channels and floodplains between the San Francisco Mountains and Alma Mesa just west of Glenwood, New Mexico. This general type of floral cover, when placed in proper geomorphic, topographic, and pedogenic perspective, generates a picture of a bit greater site stability than that experienced north of P.O.T. F/103. These more salient features involved in component preservation are taken into consideration throughout the body of this report.

The above setting was archaeologically surveyed entirely on foot, with logistic support provided by Rocky Mountain Helicopters, Inc. Sites encountered by this technique (all prehistoric), P.O.T. intervals within which they occur, and

intervening stretches of land found void of occupational zones are listed below under "Recommendations". Appendix I tabulates the sites and their P.O.T. associations. The paragraphs in Appendix II individually address specific sites, their relative corridor placement, period of occupation, a brief description, and finally, pointed recommendations concerning future disposition. Appendix III is a site index correlating field and musum designations, and relating each to their proper township, range, and section. The final "Addendum" presents a general discussion of prehistoric occupation in the southern Pine Lawn Valley, and some of the ramifications that cultural material has to Route 1-A.

METHODOLOGICAL NOTE

At the request of the United States Forest Service no archaeological sites were panelled for aerial photographic purposes in either the Apache or Gila National Forests. Consequently, a departure from proveniencing technique was necessary from that practiced by the Museum of Northern Arizona on the Zuni Indian Reservation. Instead, all relevant localities were circumscribed with flagging tape indicating the present maximum surface distribution of cultural material. Koogle and Pouls Engineering, Inc., then performed two site survey functions. First, components were spatially located in reference to P.O.T.'s-- and ultimately, therefore, to U.S. Geodetic markers. Then each discrete locality received planimetric mapping with a theodolite. These data were subsequently incorporated into a larger photogrammetric procedure involving all relevant land survey information. The final product is a 1 in. to 200 ft. aerial photograph of the entire right-of-way with calculated site locations drawn in and correct as to horizontal size and shape--

albeit lacking white plastic "T" panels.

RECOMMENDATIONS

The following is a comprehensive, sequential listing of P.O.T. designations established within this central portion of the Apache and Gila National Forest right-of-way as assigned by Koogle and Pouls Engineering, Inc. Accompanying that north to south chronology are interval recommendations addressing archaeological clearance.

TUCSON GAS AND ELECTRIC COMPANY
SAN JUAN-VAIL TRANSMISSION LINE RIGHT-OF-WAY
APACHE AND GILA NATIONAL FORESTS

Central Portion

P.O.T.	Recommendations
F/103 to F/104	Recommended for clearance
F/104 to F/105	Recommended for clearance
F/105 to F/106	Recommended for clearance
F/106 to F/107	Not recommended for clerance NA11,570 NA11,571
F/107 to F/108	Recommended for clearance
F/108 to F/109	Recommended for clearance
F/109 to F/110	Not recommended for clearance NA11,572
F/110 to F/111	Not recommended for clearance NA11,572
F/111 to F/112	Recommended for clearance
F/112 to F/113	Recommended for clearance

P.O.T.	Recommendations
F/113 to F/116	Recommended for clearance
F/116 to F/117	Recommended for clearance
F/117 to F/118	Not recommended for clearance NA11,573
F/118 to F/119	Recommended for clearance
F/119 to F/120	Recommended for clearance
F/120 to F/121	Not recommended for clearance NA11,574
F/121 to F/122	Not recommended for clearance NA11,574
F/122 to F/123	Recommended for clearance
F/123 to F/124	Not recommended for clearance NA11,575
F/124 to F/184	Not recommended for clearance NA11,575
F/184 to F/185	Not recommended for clearance NA11,576
F/185 to F/186	Not recommended for clearance NA11,576 NA11,577
F/186 to F/187	Not recommended for clearance NA11,577 NA11,578
F/187 to F/188	Not recommended for clearance NA11,578
F/188 to F/189	Recommended for clearance
F/189 to F/190	Recommended for clearance
F/190 to F/191	Recommended for clearance
F/191 to F/192	Recommended for clearance
F/192 to F/193	Not recommended for clearance NA11,579

P.O.T.	Recommendations
F/193 to F/194	Recommended for clearance
F/194 to F/195	Recommended for clearance
F/195 to F/196	Recommended for clearance
F/196 to F/197	Recommended for clearance
F/197 to F/198	Recommended for clearance
F/198 to F/199	Recommended for clearance
F/199 to F/200	REcommended for clearance
F/200 to G/1	Not recommended for clearance NA11,580
G/1 to G/2	Not recommended for clearance NA11,580
G/2 to G/3	Not recommended for clearance NA11,580 NA11,581
G/3 to G/4	Not recommended for clearance NA11,580
G/4 to G/5	Recommended for clearance
G/5 to G/6	Recommended for clearance
G/6 to G/7	Recommended for clearance
G/7 to G/8	Recommended for clearance
G/8 to G/9	Recommended for clearance
G/9 to G/10	Recommended for clearance
G/10 to G/11	Recommended for clearance
G/11 to G/12	Recommended for clearance
G/12 to G/13	Recommended for clearance
G/13 to G/14	Recommended for clearance
G/14 to G/15	Recommended for clearance

P.O.T.	Recommendations
G/15 to G/16	Not recommended for clearance NA11,582 NA11,583
G/16 to G/17	Recommended for clearance
G/17 to G/18	Not recommended for clearance NA11,584
G/18 to G/19	Not recommended for clearance NA11,584
G/19 to G/20	Recommended for clearance
G/20 to G/21	Recommended for clearance
G/21 to G/22	Recommended for clearance
G/22 to G/23	Recommended for clearance
G/23 to G/24	REcommended for clearance
G/24 to G/25	Recommended for clearance
G/25 to G/26	Recommended for clearance
G/26 to G/27	Recommended for clearance
G/27 to G/28	Recommended for clearance
G/28 to G/29	Recommended for clearance
G/29 to G/30	Recommended for clearance
G/30 to G/31	Recommended for clearance
G/31 to G/32	Recommended for clearance
G/32 to G/33	Recommended for clearance
G/33 to G/34	Recommended for clearance
G/34 to G/35	Recommended for clearance
G/35 to G/36	Recommended for clearance

TUCSON GAS AND ELECTRIC COMPANY
SAN JUAN-VAIL TRANSMISSION LINE RIGHT-OF-WAY
APACHE AND GILA NATIONAL FORESTS

APPENDIX I

Index of Archaeological Sites Located in the Apache and Gila National Forests Between P.O.T. F/103 and G/36 *

All intervals tabulated below are not recommended for clearance unless proper protective action can be provided by the user.

P.O.T.	Aerial Photo No.	Field No.	Site No.
F/106 to F/107	F-28	TG&E-GNF-44	NA11,570
F/106 to F/107	F-28	TG&E-GNF-47	NA11,571
F/109 to F/110	F-30	TG&E-GNF-49	NA11,572
F/110 to F/111	F-30	TG&E-GNF-49	NA11,572
F/117 to F/118	F-31	TG&E-GNF-45	NA11,573
F/120 to F/121**	F-31, 32	TG&E-GNF-46	NA11,574
F/121 to F/122**	F-31, 32	TG&E-GNF-46	NA11,574
F/123 to F/124**	F-32	TG&E-GNF-48	NA11,575
F/124 to F/184	F-32	TG&E-GNF-48	NA11,575
F/184 to F/185**	F-32	TG&E-GNF-51	NA11,576
F/185 to F/186**	F-32	TG&E-GNF-51	NA11,576
F/185 to F/186**	F-32,33	TG&E-GNF-52	NA11,577
F/186 to F/187**	F-32, 33	TG&E-GNF-52	NA11,577
F/186 to F/187**	F-33	TG&E-GNF-58	NA11,578
F/187 to F/188**	F-33	TG&E-GNF-58	NA11,578
F/192 to F/193	F-33	TG&E-GNF-50	NA11,579

F/200 to G/1**	F-35	TG&E-GNF-59	NA11,580
G/1 to G/2**	F-35	TG&E-GNF-59	NA11,580
G/2 to G/3**	F-35	TG&E-GNF-59	NA11,580
G/2 to G/3	F-35	TG&E-GNF-53	NA11,581
G/3 to G/4**	F-35	TG&E-GNF-59	NA11,580
G/15 to G/16	F-40	TG&E-ANF-55	NA11,582
G/15 to G/16	F-40	TG&E-ANF-56	NA11,583
G/17 to G/18	F-41	TG&E-ANF-54	NA11,584
G/18 to G/19	F-41	TG&E-ANF-54	NA11,584

* In some cases (e.g., F/106 to F/107) two or more sites may occur within the same P.O.T. interval. In other instances (e.g., F/200 to G/4) a single site may involve more than one P.O.T. interval.

** See "Addendum".

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APACHE AND GILA NATIONAL FORESTS

APPENDIX II

Inventory, Description, and Recommendation for Sites Situated
In or Near the 330 ft. Proposed Right-of-Way

SITE: NA11, 570 TG&E-GNF-44

P.O.T.: F/106 to F/107

DATE: Undetermined

DESCRIPTION: A dense prehistoric lithic scatter located in the saddle of a hogback ridge within the 330 ft. right-of-way. Lumbering operations in the area have seriously damaged this site by exposing it to erosional processes through removal of floral cover and establishment of a road through the center of the component. These mechanisms have altered the topography so that presently site settlement appears as three small discrete scatters with little cultural material between the concentrations. The density of at least two areas may be evidence for an associated occasional campsite, or a complete lithic workshop.

RECOMMENDATION: Flag and protect. The density and volume of cultural material collected from this locality is such that the site appears to be an important prehistoric activity area. The severity of erosive mechanisms at the site necessitate a combination of avoidance and protective action for sufficient maintenance.

ACTION BY TG&E: Flag and protect.

SITE: NA11,571 TG&E-GNF-47

P.O.T.: F/106 to F/107

DATE: Undetermined

DESCRIPTION: Located in the saddle of a hogback, this prehistoric lithic component is situated on the east edge of the 330 ft. proposed right-of-way. Lumbering activities have caused damage to the site through removal of floral cover and the construction of an access road through the site. It is possible that the cultural remains are an additional concentration area of NA11,570; however, because of the eroded, damaged condition of the intervening areas, exact relationships are obscured.

RECOMMENDATION: Flag and protect. Although this concentration is already badly eroded, protection and avoidance should be combined to afford maximum security for the remaining material. Excavation is advised if this site is to be used for further access or construction.

ACTION BY TG&E: Flag and protect.

SITE: NA11,572 TG&E-GNF-49

P.O.T.: F/109 to F/111

DATE: Undetermined

DESCRIPTION: A small lithic deposit was located in the saddle of a heavily eroded hogback ridge immediately adjacent to the centerline of the proposed right-of-way. This site appears to be limited to the surface, although exact depth was difficult to ascertain due to heavy erosion and a gravelly deposit of topsoil. It seems likely that portions of the component's north and south perimeter have been lost to agents of erosion.

RECOMMENDATION: Flag and protect. In this area of heavy down cutting, avoidance is a possible course of action. Systematic collection and/or excavation is possible in order to clear remaining portions of the site.

ACTION BY TG&E: Systematically surface collect; excavate if necessary (Station 1235+10)

SITE: NA11,573 TG&E-GNF-45

P.O.T.: F/117 to F/118

DATE: Mogollon V (ca. A.D. 1000-1200)

DESCRIPTION: A single-room cobble structure and associated large lithic deposit is located on both banks of a west to east-flowing intermittent stream. The habitation unit occupies a low, gravelly first terrace on the south side of the stream. Lithic material is scattered mainly on the north, higher terrace, and to a lesser degree on the south bank surrounding the room block. A moderate floral cover of grasses, forbes, and ponderosa pine have preserved the structure quite well. However, parts of the lithic assemblage have been disturbed by water erosion.

RECOMMENDATION: Although the actual rate of downcutting for this particular stream has not yet been determined, it is obvious that a swath was cut through the pre-existing site during formation of the channel. In order to protect this prehistoric habitation, avoidance is advised for the structure and associated scatter location on the south and north banks of the stream.

ACTION BY TG&E: Flag and protect.

SITE: NA11,574 TG&E-GNF-46 (see Addendum)

P.O.T.: F/120 to F/122

DATE: Mogollon IV-V (ca. A.D. 900-1100)

DESCRIPTION: Located on an interfluve covered with talus debris from Prairie Point Peak, this large lithic deposit and associated habitation exist within and extend beyond the 330 ft. proposed corridor. Localized concentrations of pottery and lithic material may later prove to be "special function" areas within the large site. At least one roomblock of an undetermined size was located, the actual size of which is obscured by the presence of historic erosion control mounds in this locality. A dense floral cover of grasses, forbes, juniper, and several species of pine appear to be protecting the remainder of the site.

RECOMMENDATION: Flag and protect. Portions of this site previously damaged by erosion control mechanisms remain of anthropological value. The site should be avoided to preserve the context and relationship of concentration areas. Should access or construction prove unavoidable in this locality, methodical collection and excavation are advised.

ACTION BY TG&E: Systematically surface collect site; excavate if necessary (Station 1302+50).

SITE: NA11,575 TG&E-GNF-48a, 48b, 48c, 48d

P.O.T.: F/123 to F/184

DATE: Mogollon III to V (ca. A.D. 800-1200)

DESCRIPTION: An interfluve overridden with talus from Leggett Peak is the setting for a large lithic scatter (TG&E-GNF-48) within which four concentration areas (TG&E-GNF-48a, 48b, 48c, 48d) have been defined.

Lithic material from TG&E-GNF-48 extends well beyond the 330 ft. proposed

right-of-way; it was traced 3420 ft. west of the proposed centerline up to approximately the 6800 ft. elevation around the eastern base of Leggett Peak. The eastern extent of cultural material extends 1655 ft. from the centerline.

TG&E-GNF-48a is a heavy concentration of lithic material located on the extreme west edge of the proposed right-of-way. A moderate ground cover of grasses, forbes, and pine needles stabilizes this area.

A small, cobble masonry roomblock with an abundant sherd concentration makes up TG&E-GNF-48b. The roomblock is oriented north to south with an area to the east that may well be a plaza. A heavy native floral cover seems to be protecting this habitation unit quite well.

A cobble masonry structure tentatively referenced as a "field house" is located 100 ft. northeast of the north bank of Dry Leggett Canyon within the east edge of the right-of-way. Abundant arable land exists around this locality which was defined by a moderate amount of pottery and lithic debris. Only through excavation could the prehistoric function of TG&E-GNF-48c be reconstructed.

TG&E-GNF-48d is a two to three-room, cobble masonry, roomblock located directly on the centerline of the staked right-of-way. No ceramic or lithic materials were directly associated with this possible "field house".

RECOMMENDATION: This complex site should be completely avoided. Systematic excavation would be required to determine the relationships of cultural remain concentration areas and habitation units. Should the locality be essential to construction or access, sampling and subsequent excavation are advised.

ACTION BY TG&E: Systematically surface collect; excavate if necessary at Tower sites: Sta. 1324+50 and 1336+00.

SITE: NA11,576 TG&E-GNF-51

P.O.T.: F/184 to F/186

DATE: Prehistoric, Mogollon IV-V (ca. A.D.900-1100)

DESCRIPTION: Located on a talus overridden interfluve, this small cobble masonry pueblo and large, possibly associated lithic scatter exist within and well beyond the limits of the 330 ft. proposed right-of-way. The dilapidated structure occupies the first terrace above a northwest by southeast flowing tributary to Dry Leggett Canyon, which exists on the east edge of the right-of-way. Lithic materials are scattered quite far east and west of the proposed right-of-way. Quercus gambelii, Juniperus deppeana, and J. monosperma as well as a moderate ground cover of grasses and forbes aid in forming a rather stable soil matrix for this locality.

RECOMMENDATION: Flag and protect. Native vegetation at this locality appears to be protecting both the habitation unit and associated lithic scatter sufficiently. For that reason avoidance of the site proper and a U.S. Forest Service road on the north boundary of the component(s) are adequate mechanisms of protection and preservation.

ACTION BY TG&E: Systematically surface collect; excavate if necessary at tower locations (Stations 1344+00 and 1352+00).

SITE: NA11,577 TG&E-GNF-52

P.O.T. F/185 to F/187

DATE: Prehistoric, Mogollon V (ca. A.D. 1000-1200)

DESCRIPTION: Located on the north bank of Wet Leggett Canyon, cultural material exists within and well beyond the 330 ft. proposed right-of-way on an interfluve overburdened with talus from Leggett Peak. A dilapidated cobble structure and associated concentrations of ceramic and lithic materials form the presently proposed main habitation area on the centerline of the staked right-of-way. This area of the site is well stabilized by a dense ground cover of grasses and forbes in addition to a canopy of Juniperus monosperma, Pinus edulis, P. ponderosa (Jack pine), and Quercus hypoleucoides. However, the southern margin of the component(s) formed by Wet Leggett Canyon has experienced severe erosion. Artifactual material found in the canyon walls and floor indicate that parts of this locality have been cut away in the formation of the gorge proper.

RECOMMENDATION: Flag and protect. Avoidance would be sufficient protection were this site not located on the rim of Wet Leggett Canyon. For that reason, and because of the undetermined rate of downcutting and subsequent site destruction, methodical testing and excavation are required to afford maximum circumlocality protection, if the site is to be used for construction.

ACTION BY TG&E: Flag and protect.

SITE: NA11,578 TG&E-GNF-58

P.O.T.: F/186 to F/188

DATE: Undetermined

DESCRIPTION: A prehistoric lithic workshop was located above the south rim of Dry Leggett Canyon and entirely within the presently proposed 330 ft. right-of-way. A concentration of diagnostic tools and debitage define the perimeter of this site.

A sparse ground cover of grasses, forbes, and moderate tree stand do little to stabilize the locality.

RECOMMENDATION: Flag and protect. It is suggested that avoidance be combined with maintenance to protect this site from further modification. Should this prove to be ineffective, total collection followed by selective formal excavation is advised.

ACTION BY TG&E: Systematically surface collect; excavate if necessary at Station 1365+00.

SITE: NA11,579 TG&E-GNF-50

P.O.T.: F/192 to F/193

DATE: Prehistoric, Mogollon IV to V (ca. A.D.900-1200)

DESCRIPTION: A several-room dilapidated cobble pueblo was located on the crest of a low profile talus slope within the west edge of the staked right-of-way. Dense forbes and grasses as well as a canopy of Juniperus monosperma, Pinus ponderosa (Jack pine), P. edulis, and Quercus hypoleucoides provide reasonable protection for this size through associated soil stability.

RECOMMENDATION: Flag and protect. The protection afforded by native vegetation in this locality, when combined with avoidance, should prove adequate. However, should right-of-way access or construction activities become necessary, excavation is recommended.

ACTION BY TG&E: Flag and protect.

SITE: NA11,580 TG&E-GNF-59

P.O.T.: F/200 to G/4

DATE: Prehistoric, Mogollon IV-V (ca. A.D.900-1100)

DESCRIPTION: The distribution of surface material in this locality extends approximately 5510 ft. west of the presently proposed right-of-way centerline, and 998 ft. east of that same locus. Further, the site as here defined (see Preliminary report, p. 5, and Addendum in this report) continues 1730 ft. down the right-of-way long-axis. Thus, it occupies almost the entirety of a high terrace interfluve above Pine Lawn Valley and Leggett Canyon. The locality terminates toward the east at a basalt outcrop that marks the terrace escarpment. It's western terminus is equally abrupt at the base of a rhyolite outcrop, and talus cone that is in large part attributable to Joe Green Peak--a remnant terrace and hogback in foothills of the San Francisco Mountains. The artifactual material from this site is majoritively large primary and secondary rhyolite flakes accompanied by massive cores of like material. Such an assemblage is characteristic of quarry sites. It is not unlikely therefore, that cultural material in this site represents successive periods of visitation over a 200 year span. This picture is complimented by at least two dilapidated cobble structures--one at the site's west end and the other termed NA11,581. Consequently, what is here labelled NA11,580 may in reality be an intricate complex of components that have differentially overlapped. Should this be the case, it is quite probable zones completely void of artifactual and nonartifactual remains may exist within the larger 11,241,540 sq. ft. locality. Presently, the existence of any culturally sterile areas that may remain are occluded by remnant vegetation from a moderate to dense floral canopy and moderate

to light ground cover.

RECOMMENDATION: Flag and protect. Though soil stability in this locality is fairly good, certain portions of the site are on or within as much of a 10 per cent grade. Further, none of this interfluvial stretch exhibits substantial grass cover. As a result, all wheeled traffic in this vicinity should be limited to Forest Service road 633. However, because that road courses through the site on a ridge above a 17 per cent off-site grade, it should be maintained at frequent intervals by the Forest Service. In fact, the road is currently in a poor state of repair along the site's more westerly reaches. Should tower placement be necessary anywhere on this site, serious consideration of the Addendum to this report is strongly advised.

ACTION BY TG&E: Systematically surface collect; excavate if necessary in vicinity of Stations 1476+20 and 1486+00.

SITE: NA11,581 TG&E-GNF-53

P.O.T.: G/2 to G/3

DATE: Prehistoric, Mogollon V (ca. A.D.1000-1100)

DESCRIPTION: A probable single room dilapidated cobble structure was located and discretely defined within the perimeter of NA11,580. The parameters of this occupation zone were delineated by increased presence of ceramics - rather atypical of the larger artifact assemblage recovered on this interfluve. An initial analysis of ceramic and architectural features indicate this pueblo to be of a later date than other cultural material on this ridge. Should this prove to be the case upon more in-depth analysis, it would more strongly argue for prehistoric

revisitation through time, and not a single occupation at a single point in time for the locality.

RECOMMENDATION: Flag and protect. As is the case with NA11,580, this site should be fully protected from all access and construction related activities. However, should this prove impractical for engineering reasons, consideration of procedures outlined in the "Addendum" is suggested.

ACTION BY TG&E: Flag and protect.

SITE: NA11,582 TG&E-ANF-55

P.O.T.: G/15 to G/16

DATE: Undetermined (possibly Prehistoric, Mogollon I-III, ca. A.D.1-700)

DESCRIPTION: Located on a low profile talus slope, this small, dilapidated cobble structure occurs within the eastern boundary of the presently proposed right-of-way. Little additional cultural material was observed; however, this may be due to a thick blanket of pine needles covering the ground. This same ground cover is partly responsible for protecting the site from erosive agents.

RECOMMENDATION: Flag and protect. Since the revegetation potential is low for the soil type in this locality, avoidance is strongly advised. If access or construction is to take place in the vicinity of this site, excavation would be required.

ACTION BY TG&E: Flag and protect.

SITE: NA11,583 TG&E-ANF-56

P.O.T.: G/15 to G/16

DATE: Prehistoric, Mogollon. Undetermined

DESCRIPTION: A possible prehistoric quarry and/or workshop site was located on a low profile talus slope within the staked centerline of the proposed corridor. This site is probably associated with NA11,582, which is approximately 150 ft. northeast. The actual relationship is obscured by a moderately dense ground cover of forbes, grasses, and some pine needles which have aided stabilization in this locality. A canopy of Pinus ponderosa (Jack pine), P. edulis, and Quercus hypoleucoides have also offered protection to this postulated "special function" area.

RECOMMENDATION: Flag and protect. As is the case with other sites in this vicinity of low revegetation potential, this site should be avoided to afford maximum protection. Should right-of-way access or construction and related activities be considered for this zone, excavation is advised.

ACTION BY TG&E: Flag and protect.

SITE: NA11,584 TG&E-ANF-54

P.O.T.: G/17 to G/19

DATE: Prehistoric, Mogollon IV-V (ca. A.D.900-1100)

DESCRIPTION: Located on a terrace of a volcanic talus slope, this dilapidated cobble structure and associated artifactual material exist largely within the eastern margin of the proposed corridor. Ceramics, lithic material, and cobble masonry were visible on a slightly mounded site surface. A moderate ground cover of forbes and grasses and a canopy of Pinus ponderosa (Jack pine), P. edulis, and Quercus hypoleucoides appear to be stabilizing the site quite well on a fairly steep grade.

RECOMMENDATION: Flag and protect. Access and construction related activities

should be avoided at this site in order to provide adequate protection. If these activities are unavoidable, excavation will be necessary to provide both necessary and sufficient component preservation.

ACTION BY TG&E: Flag and protect.

TUCSON GAS AND ELECTRIC COMPANY
SAN JUAN-VAIL TRANSMISSION LINE RIGHT-OF-WAY
APACHE AND GILA NATIONAL FORESTS

APPENDIX III

Archaeological Site Proveniencing by Township, Range, and Section

Site No.	Township	Range	Section	Field No.
NA11,570	T.6 S.	R.20 W.	S.35	TG&E-GNF-44
NA11,571	T.6 S.	R.20 W.	S.35	TG&E-GNF-47
NA11,572	T.7 S.	R.20 W.	S.02	TG&E-GNF-49
NA11,573	T.7 S.	R.20 W.	S.11	TG&E-GNF-45
NA11,574	T.7 S.	R.20 W.	S.11	TG&E-GNF-46
NA11,575	T.7 S.	R.20 W.	S.11	TG&E-GNF-48
NA11,576	T.7 S.	R.20 W.	S.14	TG&E-GNF-51
NA11,577	T.7 S.	R.20 W.	S.15	TG&E-GNF-52
NA11,578	T.7 S.	R.20 W.	S.15	TG&E-GNF-58
NA11,579	T.7 S.	R.20 W.	S.22	TG&E-GNF-50
NA11,580	T.7 S.	R.20 W.	S.27 & 28 33 & 34	TG&E-GNF-59
NA11,581	T.7 S.	R.20 W.	S.33 & 34	TG&E-GNF-53
NA11,582	T.8 S.	R.20 W.	S.09	TG&E-ANF-55
NA11,583	T.8 S.	R.20 W.	S.09	TG&E-ANF-56
NA11,584	T.8 S.	R.20 W.	S.16	TG&E-ANF-54

TUCSON GAS AND ELECTRIC COMPANY
SAN JUAN-VAIL TRANSMISSION LINE RIGHT-OF-WAY
APACHE AND GILA NATIONAL FORESTS

ADDENDUM

The Pine Lawn Valley region is ecologically distinct, archaeologically complex, and consequently poses an engineering problem unique to this district of the Gila National Forest traversed by Route 1-A. As the right-of-way courses from north to south (S.25°04'16"W.) it transects a minimum of 14 primary and secondary tributaries that empty into Pine Lawn Valley from the northwest. It is along such channels and floodplains as Dry and Wet Leggett Canyons that the earlier mentioned floodplain forest biotic ocmmunity of mature to old cottonwoods (dominantly Populus angustifolia, but also P. tremuloides farther upstream at higher elevations) and willows (Salix spp., and definitely including S. caudata, S. liqulifolia, S. lasiolepis, and S. exigua) often occur. Between those intermittent streams exist low profile interfluvial localities that support oak-juniper to pinyon-juniper communities, and exhibit an immensity of horizontally distributed cultural material (e.g., NA11,574, NA11,575, NA11,576, NA11,577, NA11,578, NA11,580). Stabilizing vegetation on thse sites is generally Quercus spp. (dominantly Q. turbinella), Pinus edulis, and Juniperus scopulorum (with some J. deppeana) accompanied by a moderate amount of grasses and forbes.

Several of the interfluves above the valley floor have been overridden by Datil formation talus from the San Francisco Mountains to the north and west. This has resulted in some soil developing in place from rhyolitic and andesitic parent material. Other soils are more often of later Gila conglomerate origin. Erosion

hazard and erodibility potentials of the former usually range from moderate to high. The latter are seldom that friable due, in part, to their mixed residuum origin, but also because of lower topographic relief, fewer cobble inclusives, and greater floral density. Further, artifactual material exhibits a present surface distribution of as much as 6500 ft. across these interchannel localities. In sum, the known archaeological resource base between P.O.T. F/120 and P.O.T. G/4 exists within a very heterogeneous matrix from both north to south and east to west. In this regard, it is very difficult to generalize stability characteristics for any particular site. On the other hand, it may be said components in the Pine Lawn Valley are a bit less prone to erosive destruction than those in the Apache National Forest north of the San Francisco Mountains.

However, issues of site conservation go beyond problems of fragility to those of sheer size. Within the presently proposed right-of-way, powerline spanning problems begin with P.O.T. F/120 and differentially continue through P.O.T. G/4 (see Appendix I). Within that 3.75 mi. interval, distances involved by spanning archaeological sites and those areas void of cultural material are as follows:

Site No.	Recommended Avoidance Distance		Distance Void of Cultural Material
NA11,574	1285 ft.		
			655 ft. (1)
NA11,575	1450 ft.		
			290 ft. (2)
NA11,575	800 ft.		
			150 ft. (3)
NA11,576	1100 ft.		
		1950 ft.	No break
NA11,577	850 ft.		
			85 ft. (4)
NA11,578	420 ft.		
			10,950 ft. (5)
NA11,580	1730 ft.		

(1) U.S. 180 and stream channel

(2) stream channel

(3) pipeline right-of-way (artifact provenience previously disturbed)

(4) stream channel

(5) no evidence for substantial occupation along centerline

NOTE: All distances calculated along presently proposed centerline from 1 in. to 200 ft. plan and profile sheets accomplished by Koogle and Pouls Engineering, Inc., on 23 October, 1972.

This problem becomes even more apparent when directly consulting the 1 in. to 200 ft. plan and profile sheets of this region for east to west site dimensions. On advice from the archaeologists concerned, Mr. J. Thomas Via, Jr., of Tucson Gas and Electric Company authorized an intensive interfluvial search for ultimate site parameters with an eye toward possible corridor relocation. That surface survey revealed rather continuous horizontal distributions of artifacts ranging from about 4530 ft. to 6498 ft. along interfluvial courses. As a result, if the right-of-way were re-established downslope to the east of cultural material, it would be near the floor of Pine Lawn Valley and consequently quite close to U.S. 180. If the corridor were moved upstream to the west of all cultural deposits, in several instances it would be well into foothills and steep talus cones of the San Francisco Mountains.

In that the above and additional factors may mitigate for establishing the powerline along its presently intended route, the following archaeological issues and general advice might be borne in mind. As briefly eluded to in discussing parameters of site stability, at least this region of the national forest is a wealth

of natural resources; and there is no reason to believe it was any less so in the past. When potentials of environmental exploitation are high the probability of semipermanent or permanent occupation is usually increased. For this reason, it is here felt localities of nonpermanent or seasonal habitation may have been returned to many times for locally available resources (e.g., Datil formation exposures). Such a pattern can result in a series of occupational zones scattered throughout a region of environmental interest. If favorability of a resource complex remains sufficiently high over a long enough span of time (e.g., ca A.D.800-1200) discrete cultural components often begin overlapping. When this happens surface-deposited artifacts from the various sites give an appearance of fairly continuous distribution over a rather wide area. At this point site definition and subsequent separation may become more statistical than visual; and increasingly smaller localities entirely void of cultural material most difficult to discern--both under initial survey conditions and in regions of moderate to dense floral cover.

In the above light, it is entirely possible that (1) a single site as here defined (e.g., NA11,580) may indeed be a complex of sites occupied by more than one group of people at more than one period of time for a similar collage of reasons, and (2) subtle zones of non-overlap in cultural assemblages may exist beyond those pointed out in this report. In sum, it is the advice of these investigators that the possibility of selective archaeological investigations be borne in mind during the planning stages of tower placement. This technique of site definition may effectively shorten presently recommended avoidance distances within the aforementioned P.O.T. intervals--and thus reduce the

probability of formal archaeological excavation. More pointedly, it might be more economical from archaeological and construction points of view to tentatively plan tower locations first. Then, instead of intensive excavation, extensively test those surrounding vicinities for hidden surface and subsurface deposits. In this manner, it may be discovered that tower movement a few yards into a heretofore unknown culturally sterile area would be holistically more expeditious than time consuming formal excavation under fixed locations. Surely, comtemporary corporate concern is every bit as much favorable toward environmental conservation as archaeologists are opposed to data reclamation under rapid "salvage" conditions.

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ARCHAEOLOGICAL CLEARANCE INVESTIGATION

TUCSON GAS AND ELECTRIC COMPANY

SAN JUAN TO VAIL TRANSMISSION LINE

NEW MEXICO AND ARIZONA

Preliminary Report

An Operational Statement

for the

Archaeological Survey of Route 1-A Right-of-Way

San Juan, New Mexico to Vail, Arizona

Zuni Indian Reservation and

Apache and Gila National Forests

Prepared by:

Emerson L. Pearson, Ann Frances Levine
and Alexander J. Lindsay, Jr.

Submitted by:

Alexander J. Lindsay, Jr.
Coordinator of Archaeological Research

July 7, 1972

ABSTRACT: As a preliminary report, this statement sets forth a theoretical and methodological format along with technique guidelines to be followed in field reconnaissance and the data-oriented interim and final reports that follow this report. In this light, brief introductory statements address intention, corridor location, and the natural setting. Methodological considerations then elucidate techniques of ground coverage, site definition, proveniencing, and the basis for site assessment. Final comments concern what may be expected from the data, and introduce subsequent reports.

INTRODUCTION

An environmental analysis dealing with any area of proposed construction necessarily involves the probable impact such activities may have on the archaeological resource base of the various natural regions to be altered. This series of statements concern the location and initial description of prehistoric, protohistoric, and historic Indian sites, and the potentially destructive effects such artificial modification could have on those components. In each instance, recommendations are offered relative to preserving their scientific and humanistic worth to the culture history and community of which they are an integral part.

The Tucson Gas and Electric Company of Tucson, Arizona will construct and maintain a 345 KV transmission line between the San Juan powerplant in northwestern New Mexico and Vail, Arizona. This line will be constructed with a maximum number of environmental constriction, including an intent to preserve archaeological remains.

This report discusses the archaeological situations, problems, and constraints as they theoretically and practically apply to the archaeological investigations on the Zuni Indian Reservation. It is expected that the methodology will also similarly apply to other

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sections of the line designated for investigation.

Approximately five per cent of the transmission line, 1-A, is presently planned to traverse the westernmost border of the Zuni Indian Reservation, New Mexico, which is the location of the Museum's first investigation on this project. In so doing, it will involve a north-south corridor of land 330 ft. wide and 22 mi. long. Physiographically, this corridor is within the Gallup-Zuni Basin district of the Zuni Uplands of the Colorado Plateau. This province exhibits rough, broken topography, largely created by the westward-flowing Zuni River to the south, and redeposited Quaternary alluvium from that channel and floodplain in the form of eolian dune sand to the north. Semi-arid adapted plants form the stabilizing vegetative cover in the area. The sandy loam solum, when seen in geomorphic, topographic, and climatic perspective, supports a biome of interdigitating communities generally involving both juniper-pinyon woodland and a more xeric desert scrub. These late seral to climax dominants have experienced massive defoliation efforts on the southern half of the reservation. To the north, removal by "chaining" has only recently begun, in a continuing endeavor to increase livestock pasture.

These natural features have played various roles in the differential preservation of archaeological remains--some of the more important of which will be discussed later. Both physical and natural features pose problems in the conduct of the archaeological survey.

METHODOLOGY

An archaeological survey of a region often presents problems not common to plant or animal ecologists, geologists, professional surveyors, and others involved in environmental impact studies. This

becomes even more the case when imminent alteration forces time as the common denominator. In such instances, the researcher's problem orientation becomes one of total reconnaissance, in an effort to generate as complete a data base as that which faces alteration (viz., 880 acres - 38,332,800 square ft. - of the Zuni Reservation). While regional experience often facilitates predictability of site location, in a general survey the archaeologist cannot rely upon a sampling universe as small as botannical transects, geological type sections, or survey lines of sight. As a result, absolute coverage requires more time and involves more field problems. These problems are discussed below.

Ground Coverage Physiography, topography, and vegetal cover are primary factors influencing effective coverage of the right-of-way. The loose, sandy matrix containing artifacts is not well-stabilized by the presence of sand-adapted, xeric vegetation. Thus, it is often necessary to continue the survey beyond east and west limits of the right-of-way; sites occurring on or within sand dunes immediately adjacent to Route 1-A are subject to easy destruction through erosion if disturbed either by defoliation or surface traffic (for example, site TG&E-ZIR-1). In another vein, the thickness of biotic communities in unchained areas and sparse presence of grasses and forbs in cleared pastures preclude much travel by automobile. Fence lines with few gates near the state line make vehicle access to the line limited to large sections of the right-of-way proper. Also, in the spirit of better understanding the archaeological resource, more than the immediate corridor is often surveyed (for example, TG&E-ZIR-2). Always, the entire area is covered on foot.

The proposed right-of-way and the necessary extensions are

investigated with several persons walking abreast in two passes. Ground visibility determines spacing between individuals, to insure a slight overlap. Approximately one-half day is devoted to one half of the right-of-way, and the other half to the remainder of the right-of-way. Each successive day's operation moves from the previous day's investigation.

Site Definition Many criteria constitute the definition of an archaeological site: cultural and temporal affinity, number and arrangement of elements, commonness, are all factors in assessing archaeological remains as to their scientific and humanistic worth. It is common archaeological practice to attempt quantification of data and description of the archaeological remains with the greatest precision possible.

Material manifestations of culture designated as artifacts, and, usually, but not always, patterned, constitute an archaeological site, and it is anticipated that certain paleontological remains may also constitute an archaeological site. Artifactual (for example, pottery) and non-artifactual (for example, soil stains and bones) finds warrant associational recognition. Such circumstances would merit recommendation for avoidance during construction, although these or similar kinds of remains are not necessarily definitively archaeological sites. They are considered probative information of buried archaeological remains. Associations of pottery with lithic debris, soil discoloration, or architecture, affirm site status. On the other hand, lack of association, with only one element present, is designated as data for the record, but not to be avoided or excavated. Clusters of artifacts and elements in association with or without non-artifactual remains are reported regardless of size of surface distribution or

density. These data are reported and recommendations for their preservation established.

Site size and shape are determined by tracing out in all directions the horizontal distribution of cultural indicators until one of two things happen: either the presence of remains cease, or their configuration changes to the point of indicating a discretely separate occupation. In each case, that point is marked for later reference. In this manner, each site eventually becomes physically circumscribed by readily noticeable points.

The horizontal extent of the occupation is mapped by reference to the designated points. Time permits only an estimation of the site's vertical dimensions. The end product is thus a reasonably accurate planimetric representation of site size and shape.

The site center is indicated by a white panel consisting of a white plastic "T" for the purpose of aerial photography, except on Forest properties.

Site Location All cultural deposits treated in these reports are located by state, county, township - range - section, and other co-ordinates. Graphically, their provenience is plotted on two maps and a photograph:

1. 1 in.=0.5 mi. U.S. Department of Interior "Soil and Range Inventory" of 1970, and Forest Service maps
2. 1 in.=2000 ft. TG&E strip maps
3. 1 in.=1000 ft. TG&E aerial photo, prepared by Koogle and Pouls Engineering, Inc.

Under most circumstances, archaeological site locations are plotted on 15 min. or 7.5 min. U.S.G.S. topographic maps. Prose placement is more often done by magnetic triangulation and linear measurement from two or more previously established and well-known points--such as section or bench marks, and prominent points of land. Working on

the Zuni Indian Reservation changes these options. In the first instance, topographic maps covering the reservation's west border are not available at the time of survey. Secondly, location is complicated by a vagueness of the state line, sporadic placement of section and mile markers, an as yet undefined right-of-way centerline, poor visibility due to topography and vegetation. Problems are often alleviated through the combined efforts of the Tucson Gas and Electric Company, Coates Field Service, Inc., Bechtel Corporation, Koogle and Pouls Engineering, Inc., and the Museum of Northern Arizona.

Once the earlier mentioned white plastic T's have been established on sites in or near Route 1A, the corridor is photographed from the air at a finished scale of 1 in. to 200 ft. In that each site is readily identifiable on the photograph from other features, it becomes a simple matter to both transpose the locality to other maps, and verbally present co-ordinates and distances from other known points in the picture.

While extremely accurate, this technique of horizontal site location is an obvious break in tradition. Normally, site location is one of the first of several in-field operations. It is clear that this approach relegates it to last. As such, a certain caution must be born in mind. Any surface marking should be anchored quite securely, so as not to be ex post facto moved or covered over by natural or artificial agents. Further, all locators must be placed on an area of the site, and be large enough to facilitate aerial recognition. From several points of view, the end product is certainly worth the effort. Panels must be removed immediately after the aerial photographic fly-over.

Site Assessment There are three underlying assumptions upon which

this series of reports and their recommendations are based. The first deals with the nature of the archaeological site proper. Whether a component is an occasional camp or a major pueblo, it is still the primary source of data to the archaeologist. It is perishable, quite unique, and unquestionably irreplaceable. The second assumption concerns the destructive effects of construction. Because sites are perishable, uncontrolled artificial alteration may forever reduce reliability of the data contained within; and certainly, the same information cannot be expected to be duplicated in other deposites. Thirdly, very little is known about the archaeology of the power line transcent. For this reason, there is even less probability that any one locality will "duplicate" another. In these three respects, all sites are important, as there are no unimportant or less important sites in an archaeological resource base.

Two criteria are used in these recommendations to access protection by avoidance or by excavation. The first deals with site size and density of remains. Isolated finds are of low cost-benefit worth to the energy and finances invested for the paucity of data retrieved. On the other hand, it is sometimes the case that a small surface deposit, when found in association with soil discoloration or hints of architecture, is strongly suggestive of a much larger intact story than mere isolated or out-of-context remnants. Such definitely constitutes grounds for the maximum amount of protection that can be afforded. The second and more obvious criterion rests with site location; is it, or is it not "in the way", or exposed to disturbance? If a site is of a magnitude to be archaeologically rewarding, is it then in danger of being disturbed by any form of surface or subsurface activities involved in or tangential to right-of-way clearance,

construction, regular maintenance activities, access road building, quarrying, or even sporadic crossing by wheeled vehicle? If any of these or similar considerations become possibilities, then the site must necessarily carry an avoidance of excavation recommendation--more especially in light of the very friable nature of local soils.

While the latter of the above criteria is easy enough to quantify, a brief word should be said concerning utility documentation procedures, the sampling and initial description of artifacts. When sites are encountered of a non-isolated find nature, and yet exhibit a low density of surface-distributed artifacts, total recovery of transportable, diagnostic material is attempted. However, should the distribution or density of cultural material be so great as to pragmatically negate such an endeavor, a "random" sampling transect is projected across the site. In other words, such a site is mapped before it receives surface sampling. Which of these two procedures is utilized, or any variations on the same, is always stated in the specific site notes. In this manner, verified site yield statements take on greater interpretive perspective.

Because regional chronologies are far from being worked out in the region of the transcent, temporal statements are not attempted for each component. Instead, such hallmarks as ceramic types and differences in lithic assemblages are used only as tentative projections toward cultural affiliation. The exactitudes of antiquity are far from permitting precise in-field temporal placement--especially in this region of archaeological infancy.

EXPECTATIONS

Interim reports and a final statement are to follow this preliminary operational statement. The interim reports will provide an

ongoing assessment of the research investigations, and will carry information on site data for both scientific documentation and construction research and design. The final report will close out the investigations made by the Museum of Northern Arizona over its areas of responsibility; summarizing and drawing some necessarily tentative conclusions, on the work.

At present, one thing is fact. There are archaeological sites either in or immediately adjacent to the presently proposed right-of-way. In selected areas on the north-half of the Zuni Reservation, site density in one instance is five sites in 1 mi. In terms of projected site size for a single component, at least one site slightly less than one-quarter of 1 mi. long is known. Several of these occupation areas are estimated to be in pristine preservation, and the total temporal span represented is quite long.

At this time, there are several ideas emerging from the investigations that are interesting to report and are related to previous work in the area. Archaeological research in the Zuni area during the early 1900's focused on large sites, such as Hawikuh, near Ojo Caliente - excavated by F. W. Hodge between 1917 and 1923. Archaeological investigations to the west in Arizona in the same era, and in later years, revealed additional information about the Zuni prehistory. These studies offer demonstration of a long period of development, and a broad geographic region within which the Zuni-Cibola tradition evolved. Data from this project lends support to the proposition of continuity of site distribution throughout this area of Arizona and New Mexico. Further, one may consider the matter of settlement affinity in sites such as those found in the right-of-way to sites of similar and unlike character beyond the transmission line transect. The

future documentation of the possible community relationships has important anthropological values.

MUSEUM OF NORTHERN ARIZONA
DEPARTMENT OF ANTHROPOLOGY

ARCHAEOLOGICAL CLEARANCE INVESTIGATION

TUCSON GAS AND ELECTRIC COMPANY

SAN JUAN-VAIL TRANSMISSION LINE RIGHT-OF-WAY

NEW MEXICO - ARIZONA

Interim Report

for the

Archaeological Survey of Route 1-A Right-of-Way

345 KV San Juan-Vail Transmission Line

Apache National Forest (Luna District): P.O.T. F/1 to P.O.T. F/103

Apache National Forest

Catron County, New Mexico

Prepared by:

Frances Levine and Emerson L. Pearson
Archaeologists

Submitted by:

Alexander J. Lindsay, Jr.
Coordinator of Archaeological Research

December 5, 1972

ABSTRACT: This more northerly in a series of interim reports on the Apache and Gila National Forests (ANF and GNF) constitutes a continuance by the Museum of Northern Arizona in archaeological clearance of the San Juan-Vail proposed 345 KV powerline right-of-way for the Tucson Gas and Electric Company. In this vein, a corridor 330 ft. wide extending from P.O.T. F/1 to P.O.T. F/103 was surveyed. That interval of the transect (Route 1-A) exists wholely within the Apache National Forest, it is both physiographically and biotically distinct from that to the south, and came to include a minimum of 16 sites (3 historic and 13 prehistoric). This statement addresses immediately relevant general aspects of the physical environment, tabulates associated sites, and consequently offers recommendations concerning right-of-way clearance for establishment and maintenance of the powerline. That listing is supported by three appendices: the first relates relevant material encountered to specific P.O.T. intervals involved, the second describes specific sites and elucidates on recommendations for disposition, and the last positions localities to be avoided within their proper township, range and section.

INTRODUCTION

As the first in a series of interim reports dealing with the Apache and Gila National Forests, this statement concerns archaeological values in that portion of the Tucson Gas and Electric Company (TG&E) proposed right-of-way between P.O.T. F/1 and P.O.T. F/103. This interval of Route 1-A is entirely within the Apache National Forest (Luna district), and covers approximately 21 linear mi. from the north end of the forest south to the westernmost extension of the San Francisco Mountains. Within that distance 16 archaeological sites (NA11,554 to NA11,569) were located in or immediately adjacent to the proposed powerline right-of-way.

Though somewhat transitional to the environment south of the San Francisco Mountains, this northern sector is both physiographically and biotically distinct -- each of which has a definite bearing on the archaeological resource base, subsequent impact on those data through artificial alteration, and consequent recommendations

discussed later. In the first instance, the region belongs to the Datil section of the Colorado Plateau physiographic province. Parent material in this intermontane district has helped produce a gravelly clay or clay loam subsoil that is capped off by gravelly loam -- a soil profile not at all conducive to mechanical stability. In the second instance, the terrain presently supports a lower montane coniferous forest community (dominantly Pinus ponderosa), which is interspersed with alpine-like meadows experiencing domination by tall grasses and succulent herbs. This general type of floral cover, when placed in proper pedologic and and geomorphic perspective, generates a picture of moderate to high erodibility. These factors, along with topographic features and corridor proximity are taken into consideration throughout the body of this report.

The above setting was archaeologically surveyed on horseback and on foot. Those sites encountered by this technique (3 historic and 13 prehistoric), the P.O.T. intervals within which they occur, and intervening stretches of land found void of occupational zones are listed below under "Recommendations". Appendix I tabulates the sites and their P.O.T. associations. The paragraphs in Appendix II individually address specific sites, their relative corridor placement, period of occupation, a brief description, and finally, pointed recommendations concerning future disposition. Appendix III is a site index correlating field and museum designations, and relates each to their proper township, range, and section.

METHODOLOGICAL NOTE

At the request of the United States Forest Service no archaeological sites were panelled for aerial photographic purposes in either the Apache or Gila

National Forests. Consequently, a departure from proveniencing technique was necessary from that practiced by the Museum of Northern Arizona on the Zuni Indian Reservation. Instead, all relevant localities were circumscribed with flagging indicating the present maximum surface distribution of cultural material. Koogle and Pouls Engineering, Inc., then performed two site survey functions. First, components were spatially located in reference to P.O.T.'s -- and ultimately, therefore, to U.S. Geodetic Survey markers. Then each discrete locality received planimetric mapping with a theodolite. These data were subsequently incorporated into a larger photogrammetric procedure involving all relevant land survey information. The final product is a 1 in. to 200 ft. aerial photograph of the entire right-of-way with calculated site locations drawn in and correct as to horizontal size and shape -- albeit lacking white plastic "T" panels.

RECOMMENDATIONS

The following is a comprehensive, sequential listing of P.O.T. designations established within this northern portion of the Apache National Forest right-of-way as assigned by Koogle and Pouls Engineering, Inc. Accompanying that north to south chronology are interval recommendations addressing archaeological clearance.

TUCSON GAS AND ELECTRIC COMPANY
SAN JUAN-VAIL TRANSMISSION LINE RIGHT-OF-WAY
APACHE NATIONAL FOREST

Northern Portion

P.O.T.	Recommendations
F/1 to F/2	Recommended for clearance
F/2 to F/3	Recommended for clearance

F.O.T.	Recommendations
F/3 to F/4	Recommended for clearance
F/4 to F/5	Recommended for clearance
F/5 to F/6	Recommended for clearance
F/6 to F/7	Recommended for clearance
F/7 to F/8	Recommended for clearance
F/8 to F/9	Recommended for clearance
F/9 to F/10	Recommended for clearance
F/10 to F/11	Recommended for clearance
F/11 to F/12	Recommended for clearance
F/12 to F/13	Recommended for clearance
F/13 to F/14	Not recommended for clearance NA11,554
F/14 to F/14A	Not recommended for clearance NA11,554
F/14A to F/15	Recommended for clearance
F/15 to F/16	Recommended for clearance
F/16 to F/17	Recommended for clearance
F/17 to F/18	Recommended for clearance
F/18 to F/19	Recommended for clearance
F/19 to F/20	Recommended for clearance
F/20 to F/21	Recommended for clearance
F/21 to F/22	Recommended for clearance
F/22 to F/23	Recommended for clearance
F/23 to F/24	Recommended for clearance
F/24 to F/25	Recommended for clearance

P.O.T.	Recommendations
F/25 to F/26	Recommended for clearance
F/26 to F/27	Recommended for clearance
F/27 to F/28	Recommended for clearance
F/28 to F/29	Recommended for clearance
F/29 to F/30	Recommended for clearance
F/30 to F/31	Recommended for clearance
F/31 to F/32	Recommended for clearance
F/32 to F/33	Recommended for clearance
F/33 to F/34	Recommended for clearance
F/34 to F/34A	Not recommended for clearance NA11,555
F/34A to F/35	Not recommended for clearance NA11,555; NA11,556
F/35 to F/36	Not recommended for clearance NA11,557
F/36 to F/36A	Recommended for clearance
F/36A to F/37	Recommended for clearance
F/37 to F/38	Recommended for clearance
F/38 to F/39	Recommended for clearance
F/39 to F/40	Recommended for clearance
F/40 to F/41	Recommended for clearance
F/41 to F/42	Recommended for clearance
F/42 to F/43	Recommended for clearance
F/43 to F/44	Recommended for clearance
F/44 to F/45	Recommended for clearance

P.O.T.	Recommendations
F/45 to F/46	Recommended for clearance
F/46 to F/47	Recommended for clearance
F/47 to F/48	Recommended for clearance
F/48 to F/49	Not recommended for clearance NA11,558
F/49 to F/50	Recommended for clearance
F/50 to F/51	Recommended for clearance
F/51 to F/52	Recommended for clearance
F/52 to F/53	Recommended for clearance
F/53 to F/54	Recommended for clearance
F/54 to F/55	Not recommended for clearance NA11,559
F/55 to F/56	Not recommended for clearance NA11,559; NA11,560
F/56 to F/57	Not recommended for clearance NA11,560; NA11,561
F/57 to F/58	Not recommended for clearance NA11,562
F/58 to F/59	Recommended for clearance
F/59 to F/60	Not recommended for clearance NA11,563
F/60 to F/61	Recommended for clearance
F/61 to F/62	Not recommended for clearance NA11, 564
F/62 to F/63	Not recommended for clearance NA11,564
F/63 to F/64	Recommended for clearance
F/64 to F/65	Not recommended for clearance NA11,565

P.O.T.	Recommendations
F/65 to F/66	Not recommended for clearance NA11,565
F/66 to F/67	Not recommended for clearance NA11,566; NA11,567
F/67 to F/68	Not recommended for clearance NA11, 567
F/68 to F/69	Recommended for clearance
F/69 to F/70	Recommended for clearance
F/70 to F/71	Not recommended for clearance NA11,568
F/71 to F/72	Recommended for clearance
F/72 to F/73	Recommended for clearance
F/73 to F/74	Recommended for clearance
F/74 to F/75	Recommended for clearance
F/75 to F/76	Recommended for clearance
F/76 to F/77	Recommended for clearance
F/77 to F/78	Recommended for clearance
F/78 to F/79	Recommended for clearance
F/79 to F/80	Recommended for clearance
F/80 to F/81	Recommended for clearance
F/81 to F/82	Recommended for clearance
F/82 to F/83	Recommended for clearance
F/83 to F/84	Recommended for clearance
F/84 to F/85	Recommended for clearance
F/85 to F/86	Recommended for clearance
F/86 to F/87	Recommended for clearance

P.O.T.	Recommendations
F/87 to F/88	Recommended for clearance
F/88 to F/89	Recommended for clearance
F/89 to F/90	Recommended for clearance
F/90 to F/91	Recommended for clearance
F/91 to F/92	Recommended for clearance
F/92 to F/93	Recommended for clearance
F/93 to F/94	Recommended for clearance
F/94 to F/95	Recommended for clearance
F/95 to F/96	Recommended for clearance
F/96 to F/97	Recommended for clearance
F/97 to F/98	Recommended for clearance
F/98 to F/99	Recommended for clearance
F/99 to F/100	Recommended for clearance
F/100 to F/101	Recommended for clearance
F/101 to F/102*	Recommended for clearance
F/102 to F/103*	Recommended for clearance

* Recommendations Supplement

The above listing is correct as of October 1, 1972. Prior to that time, changes in proposed powerline location altered interval clearance in two instances. Those earlier interval designations and their recommendations are presented here in the event another relocation would return the line to its originally intended route.

P.O.T.	Recommendations
F/101 to F/102	Not recommended for clearance NA11,569
F/102 to F/103	Not recommended for clearance NA11,569

TUCSON GAS AND ELECTRIC COMPANY
SAN JUAN-VAIL TRANSMISSION LINE
APACHE NATIONAL FOREST

APPENDIX I

Index of Archaeological Sites Located in the
Apache National Forest between P.O.T. F/1 and F/103*

All intervals tabulated below are not recommended for clearance, unless proper protective action can be provided by the user.

P.O.T.	Aerial Photo No.	Field No.	Site No.
F/13 to F/14	F-3	TG&E-ANF-29	NA11,554
F/14 to F/14A	F-3	TG&E-ANF-29	NA11,554
F/34 to F/34A	F-7	TG&E-ANF-32	NA11,555
F/34A to F/35	F-7	TG&E-ANF-32	NA11,555
F/34A to F/35	F-7	TG&E-ANF-31	NA11,556
F/35 to F/36	F-7	TG&E-ANF-30	NA11,557
F/48 to F/49	F-11	TG&E-ANF-33	NA11,558
F/54 to F/55	F-13	TG&E-ANF-34	NA11,559
F/55 to F/56	F-13	TG&E-ANF-34	NA11,559
F/55 to F/56	F-13	TG&E-ANF-35	NA11,560
F/56 to F/57	F-13	TG&E-ANF-35	NA11,560
F/56 to F/57	F-13	TG&E-ANF-36	NA11,561
F/57 to F/58	F-13	TG&E-ANF-37	NA11,562
F/59 to F/60	F-14	TG&E-ANF-38	NA11,563
F/61 to F/62	F-14	TG&E-ANF-39	NA11,564
F/62 to F/63	F-14	TG&E-ANF-39	NA11,564
F/64 to F/65	F-15	TG&E-ANF-40	NA11,565

P.O.T.	Aerial Photo No.	Field No.	Site No.
F/65 to F/66	F-15	TG&E-ANF-40	NA11,565
F/66 to F/56	F-15	TG&E-ANF-41	NA11,566
F/66 to F/56	F-15	TG&E-ANF-42	NA11,567
F/67 to F/68	F-15	TG&E-ANF-42	NA11,567
F/70 to F/71	F-16	TG&E-ANF-43	NA11,568

* In some cases (e.g., F/56 to F/57), two or more sites may occur within the same P.O.T. interval. In other instances, (e.g., F/64 to F/66), a single site may involve more than one P.O.T. interval.

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APACHE NATIONAL FOREST

APPENDIX II

Inventory, Description, and Recommendation for Sites
Situated In or Near the 330 ft. Proposed Right-of-Way

SITE: NA11,554; TG&E-ANF-29

P.O.T.: F/13 to F/14A

DATE: Historic Anglo, (ca. Post A.D.1940)

DESCRIPTION: Located on the first terrace above the floodplain of Jones Canyon Draw, this site occurs entirely on the surface, and well within the eastern margin of the proposed right-of-way. The artifact distribution consists of two collapsed wooden structures, an area of concentrated historic material, and a general distribution of surface debris that occupies an area approximately 400 ft. from north to south, and 300 ft. from east to west. Dense ground cover of grasses and scrubs seem to be preserving this site quite well.

RECOMMENDATION: Flag and protect. Due to the existence of this site in an area of dense ground cover where erosion is minimal to moderate, and adjacent to an established Forest Service access road, avoidance is most probably sufficient protection. However, should it be necessary to use this portion of the right-of-way for access it is here suggested that the locality be systematically collected and recorded. Such efforts at historic reconstruction would add handsomely to the paucity of data surrounding early Anglo occupation and economic exploitation of the region.

ACTION BY TG&E: Flag and protect.

SITE: NA11,555 TG&E-ANF-32

P.O.T.: F/34 to F/35

DATE: Prehistoric, Mogollon I to II (ca. A.D.1-500)

DESCRIPTION: Positioned slightly east of the presently proposed eastern right-of-way margin, this probable hilltop camp exists on a remnant first terrace above the floodplain of Spur Lake Draw. Such topographic placement has located the site within and eroding away with a cobble included loam to sandy loam top soil. Unfortunately, overgrazing and percentage of slope grace have not permitted natural maintenance of stabilizing primary grasses. The paucity of this floral dominant has left site preservation largely in the hands of a mixed community involving Pinus edulis, Juniperus deppeana, J. scopulorum and, to a lesser extent, P. ponderosa. As a result, the northern and southern slopes of this locality are now experiencing sheetwash and gully erosion. The severity of this deterioration increases near the site center.

RECOMMENDATION: Flag and protect. Such protection should be afforded well beyond the margins of the site proper if preservation of a continuing nature is to be insured.

ACTION BY TG&E: Flag and protect.

SITE: NA11,556 TG&E-ANF-31

P.O.T.: F/34A to F/35

DATE: Undetermined

DESCRIPTION: Existing on the southwest face of a remnant first terrace above the floodplain of Spur Lake Draw, this small prehistoric lithic workshop is

located within the proposed 330 ft. right-of-way. Present surface distribution of cultural material does not exceed 95 ft. in a northeast to southwest direction, and 25 ft. in a west by northwest to east by southeast direction. However, due to erosion on the east and west sloping margins of this site, the perimeter is spreading through erosion from the main body of the component.

RECOMMENDATION: Flag and protect. An alternative measure would be excavation.

ACTION BY TG&E: Flag and protect.

SITE: NA11,557 TG&E-ANF-30

P.O.T.: F/35 to F/36

DATE: Undetermined

DESCRIPTION: This probable lithic workshop is positioned on an 11 per cent grade between a second and first terrace above the floodplain of Spur Lake Draw. As such, artifactual material exists on and somewhat within a soil matrix developed in residuum from andesite parent material--a typical geomorphic and pedogenic picture for terraces within foothills bordering the western margin of Spur Lake Basin. For this reason, the loam to sandy loam level within which this cultural component exists exhibits, at best, a surface runoff, erosion hazard, and erodibility rating of moderate--more especially in light of a readily noticeable degree of cobble inclusives. The principal stabilizing factor on the interterrace slope is a presently uniform blanket of grasses, and secondarily Pinus edulis and Juniperus scopulorum.

RECOMMENDATION: Flag and protect. If this suggestion is followed simple

locality avoidance should provide sufficient protection for site preservation.

ACTION BY TG&E: Flag and protect.

SITE: NA11,558 TG&E-ANF-33

P.O.T.: F/48 to F/49

DATE: Prehistoric, Mogollon II to III (ca. A.D.500-900)

DESCRIPTION: The volcanic physiography of Red Butte occupies almost the entirety of sections 34 and 35 within R20W, T4S. For at least three reasons this situation increases the probability of site occurrenc. First, intersite settlement patterning in this lower montane coniferous forest region of the Colorado Plateau leans strongly toward terrace occupation (e.g., NA11,561, NA11,562, NA11,563, NA11,568). There are a minimum of ten pronounced terraces moving radially away from the cinder cone proper. Second, and intimately related to site placement on terraces, is effective water and potentially arable land resources. Surrounding the butte are Black Gap to the south, upper reaches of S.A. Creek on the west, Funderburg Draw to the east, and ultimately Spur Lake Basin and the more recently associated Hulsey Lake to the north. Finally, there is the mineralogical importance of Red Butte. The Datil formation exhibits excellent exposure in this region--the exploitation potentials of which are attested to in a high percentage of rhyolitic and andesitic artifacts from NA11,558 and sites farther north.

Geomorphic and topographic circumstances surrounding Red Butte have not led to pedological stability, nor the maintenance of natural vegetation to enhance such. NA11,558 typifies this picture. Positioned in a saddle between two butte-associated terraces has placed the site approximately

270 ft. downslope to the east of the east edge of the presently proposed right-of-way. As such, cultural material exists on and within very coarse textured gravelly, sandy loam. That matrix contains heavy talus concentrations, and is thin enough to expose Tertiary bedrock at several points within the saddle. This saxicolous environment has afforded little opportunity for grass or forb development. For this reason, the major soil stabilizing dominant is currently Pinus ponderosa (Jack pine) and secondarily Quercus gambelii--each of which occur in a mixed, open park-like stand. The end product is an archaeological site with high erodibility and erosion hazard potentials.

RECOMMENDATION: Flag and protect. While the right-of-way is presently planned to miss NA11,558, and though an existing forest service road provides limited access to portions of that corridor, both are in an upslope direction from the site. That hill and local terracing are very loosely consolidated. Heavy road use, and any off-road traffic would promote surface erosion of both degree and kind quite deleterious to site preservation. Site avoidance and judicious circumlocality travel are necessary for site protection. In the long term, the Forest Service could consider an intensive program of tree planting--bearing in mind productivity level, range herbage, and revegetation potentials carry low ratings for site protection.

ACTION BY TG&E: Flag and protect.

SITE: NA11,559 TG&E-ANF-34

P.O.T.: F/54 to F/56

DATE: Prehistoric, Mogollon III (ca. A.D.700-900)

DESCRIPTION: This lithic workshop is located well within the proposed 330 ft. right-of-way on a high terrace above a southward flowing tributary of S.A. Creek. The south edge and central portion of the site have been subjected to a moderate amount of erosion due to lack of sufficient vegetal ground cover. However, the site appears generally to be in good condition.

RECOMMENDATION: Flag and protect. A general lack of sufficient grasses in this area is evident, and the Forest Service could consider floral seeding in conjunction with complete avoidance are necessary to fully protect this lithic workshop.

ACTION BY TG&E: Flag and protect.

SITE: NA11,560 TG&E-ANF-35

P.O.T.: F/55 to F/57

DATE: Undetermined

DESCRIPTION: Located at the apex of a steep hogback and running parallel with its long axis, this possible defensive wall of cobble rhyolite is in a poor state of repair. Positioned on badly weathered rhyolitic bedrock of the Datil formation that has been overridden by talus shale has afforded a highly unstable foundation. As a result, only about 82 linear ft. remain of what at one time was minimally 135 ft. of fortification above a lush valley and tributary channel to S.A. Creek.

RECOMMENDATION: Flag and protect. Though no historic and/or prehistoric artifacts presently remain beyond the wall proper, a careful study of this and like features throughout Spur Lake Basin and similar environmental circumstances in this intermontane vicinity should shed meaningful light on this regional problem.

ACTION BY TG&E: Flag and protect.

SITE: NA11,561 TG&E-ANF-36

P.O.T.: F/56 to F/57

DATE: Prehistoric, Mogollon IV to V (ca. A.D.950-1100)

DESCRIPTION: Positioned on an alluviated first terrace above the floodplain of a tributary to S.A. Creek, this possible camp site exists within a park-like canopy of Pinus ponderosa ad scattered P. edulis and is presently used as pasture. Because the terrace in this locality is relatively flat and overgrazing does not seem to have been a practice in the recent past, it is here suspected the site is in good condition.

RECOMMENDATION: Flag and protect. The protective top soil and stabilizing matrix within which cultural material exists is a gravelly loam to sandy, silt loam. The presence of a good grass cover and scattering of forbs is largely responsible for holding this material in place and consequently permits a surface runoff and erosion hazard classification of moderate. Any form of defoliation, mechanized or otherwise, would certainly elevate the probability of lateral movement to extreme--regardless of reduced topographic grade.

ACTION BY TG&E: Flag and protect.

SITE: NA11,562 TG&E-ANF-37

P.O.T.: F/57 to F/58

DATE: Prehistoric, Mogollon IV to V (ca. A.D.950-1100)

DESCRIPTION: Situated on the same terrace as NA11,561 this possible permanent camp is nevertheless more susceptible to destruction through erosion, and of potentially greater data yield. In the first instance, aggraded alluvium has

overridden mixed sandstone and rhyolite talus from a questa immediately northeast of the site. From a cultural standpoint, this southern component exhibits an immediately recognizable terrace edge (hillside) midden, dilapidated two room cobble sandstone structure, and a higher density of surface distributed artifacts. Botanically, the terrace supports a much thinner tree stand, but quite comparable grass and forb coverage to that surrounding NA11,561. In general, the site proper is presently in relatively good condition for pasture, and evidences a probable phasal affinity to NA11,561.

RECOMMENDATION: Flag and protect. Regardless of similar topography, and both kind and degree of stabilizing floral cover, this site is even less structurally stable than NA11,561. Though the soil matrix within which artifactual remains occur is a sandy, silt loam, the subsoil--and possibly original living floor--is potentially more prone to mobility than the more northerly gravelly clay to clay loam. Protection should include avoidance by wheeled vehicle surface traffic.

ACTION BY TG&E: Flag and protect.

SITE: NA11,563 TG&E-ANF-38

P.O.T.: F/59 to F/60

DATE: Historic Anglo (ca. Post A.D.1920)

DESCRIPTION: This historic log structure is located in an alpine-like meadow on the first terrace above an old channel of S.A. Creek. That places the building approximately 500 ft. west of the present location of that same creek, and well within the proposed 330 ft. right-of-way. Hatchet and saw cut Pinus ponderosa piled nine high form support for an open beam ceiling that was originally 8.0 ft.

high. The overall length of the two room structure is 28 ft., and the width is 13 ft. Plans of the interior layout suggest two rooms connected by one door in an interior wall. The more northerly room opens to the outside through a door in the cabin's exterior west wall, and a window in the opposite wall. The larger southern room opens to the outside by means of a large, barn-size door in the building's exterior east wall. No other doors or windows exist. It is possible the larger room served as a shed, animal shelter, or carriage house.

RECOMMENDATION: Flag and protect. Techniques of layout and construction date this structure early in the historic settlement of S.A. and Centerfire Creeks. As a well-preserved example of early settlement architecture, this site should be completely avoided.

ACTION BY TG&E: Flag and protect.

SITE: NA11,564 TG&E-ANF-39, 39a , 39b, 39c, 39d, 39e

P.O.T.: F/61 to F/63

DATE: Prehistoric, Mogollon III to V (ca. A.D.800-1050)

DESCRIPTION: An extensive survey of this locality has led to an initial impression that six discrete areas of artifact concentration may well represent but one period of occupation by one group of people at a single point in time. Intensive investigation might one day alter this notion. However, present thinking has resulted in the combining of field numbers TG&E-ANF-39, -39a, -39b, -39c, -39c, -39e under one Museum site number. The reason for this action has a definite bearing on subsequent site recommendations and is as follows.

TG&E-ANF-39a,-39c, and 39d occur on a series of eastward projecting

benches. Geomorphologically, these are erosional Datil formation remnants of a more westerly high terrace above the junction of Bishop Canyon and Hulsey Cienega. TG&E-ANF-39 and -39b are situated on a detrital first terrace above Bishop Canyon creek. TG&E-ANF-39e appears to be re-deposited material occurring on and within a talus cone immediately beneath the bench occupied by -39c. In such physiographic position these interrupted occurrences of cultural material represent a series of artifact clusters slightly in excess of 900 linear ft. from north to south. TG&E-ANF-39 begins this seris, and is suggestive of a primary residence locality. In no other cluster does the volume of ceramic material or presence of food grinding implements occur. Neither do -39b through -39e presently evidence obvious housing; in this instance at least two dilapidated sandstone cobble structures. Finally, the number of projectile points and utilized lithic debris exceed that from deposits to the south. In sum, current evidence strongly mitigates for five separate but associated "special function areas: within what is here termed NA11,564--with TG&E-ANF-39e representing not much more than material eroding out of -39c, a possible flint knapping area, immediately above.

The condition of the various deposits varies with physiographic placement. TG&E-ANF-39 and -39b exist within a soil matrix pedologically termed cumulic haplustolls. These soils are sandy loam to clay loam and are underlain by a clay loam to sandy clay loam, and thus present a bottomland picture of extreme erosion hazard--more especially if topographically elevated such as this first terrace occupation. However, the earlier presence of Pinus ponderosa (recently lumbered) and present occurrence of P. edulis along with well established grasses and forbs have

deterred normally expected slope wash and gullying. The only exception to this is on TG&E-ANF-39 where a lumbering road has passed through the middle of one architectural feature and a bull dozer through the other. On the other hand, TG&E-ANF-39a, -39c, and -39d are to be pedologically found partly on and within a lithic haplustolls. Where this is not the case artifacts were located on exposed bedrock. Because this soil type is a gravelly, sandy loam, and because of percentage of slope grade, local erodibility is extremely high. The ongoing product is thus rapid site destruction without any aid from artificial intervention. TG&E-ANF-39e exists within an immature soil profile of continually growing talus debris.

RECOMMENDATION: Flag and protect. Avoidance by all wheel traffic should constitute sufficient protection for areas TG&E-ANF-39 and -39b. Adequate protection for TG&E-ANF-39a, -39c, and -39d should proceed beyond simple avoidance. Their physiographic position, precarious topographic circumstances, pedologic environment and lack of floral cover strongly argue for a systematic surface collection. Only through such intensive exploration will data preservation be accomplished. TG&E-ANF-39e is of limited anthropological value due to its complete lack of in situ placement.

ACTION BY TG&E: Place tower at Station 651+20 between concentrations 39a and 39c. Flag and protect all other concentrations. Archaeologist should investigate tower site prior to construction; if necessary, apply protective action.

SITE: NA11,565 TG&E-ANF-40

P.O.T.: F/64 to F/66

DATE: Undetermined

DESCRIPTION: Located on a remnant high terrace above the Hulsey Cienega region of Bishop Canyon, this probable prehistoric lithic workshop is very susceptible to artificial alteration. The soil matrix within which most cultural material occurs is an extremely thin, course textured sandy loam with a moderate amount of gravel inclusives. Artifacts not found in this context lay loose on surface exposed Tertiary bedrock--a local sedimentary facies of the Datil formation. Further, the amount of stabilizing vegetation is at a bare minimum. The paucity of grass cover is not much supplemented by the presence of a few forbs, and the entire terrace supports only an occasional juniper (Juniperus monosperma) sporadically bolstered by even fewer Jack pine (Pinus ponderosa).

RECOMMENDATION: Flag and protect. Complete avoidance would consitute both necessary and sufficient site protection.

ACTION BY TG&E: Flag and protect.

SITE: NA11,566 TG&E-ANF-41

P.O.T.: F/66 to F/67

DATE: Undetermined

DESCRIPTION: A prehistoric surface scatter of lithic material occurs on a low profile talus slope (10 per cent grade) on the south side of Bishop Canyon in the vicinity of Hulsey Cienega. The north end of this deposit has already been destroyed by Frisco Box road, and the rest of the site is endangered by topographic slope and soil mechanics. The only feature preserving this component from natural destruction is a very well established community of grasses and forbs.

RECOMMENDATION: Flag and protect. Because NA11,566 occurs at the junction of Frisco Box road and Route 1A, and in that this forest service road will probably be used as an access to that right-of-way, it is here felt the site is in immediate jeopardy. Heavy traffic along the existing road would increase destruction probability at the site's north end. For this reason, adequate site protection must necessarily involve complete locality avoidance coupled with very judicious road travel.

ACTION BY TG&E: Systematically surface collect site and excavate if necessary at tower location (Station 716+50).

SITE: NA11,567 TG&E-ANF-42

P.O.T.: F/66 to F/68

DATE: Prehistoric, Mogollon III to IV (ca. A.D. 700-900)

DESCRIPTION: This possible permanent camp is located on a low profile talus slope above Hulsey Cienega. Marginal defoliation and gully action have caused damage to the central portion of the site. Continued lateral movement of soil may eventually reach a portion of this component containing a dioapidated rock structure.

RECOMMENDATION: Flag and protect. General avoidance is suggested as sufficient protection, as topographic placement and pedological circumstances of the site make it subject to destruction by disturbance of adjacent areas.

ACTION BY TG&E: Flag and protect.

SITE: NA11,568 TG&E-ANF-43

P.O.T.: F/70 to F/71

DATE: Prehistoric, late Mogollon IV; Mogollon V (ca. A.D.900-1100)

DESCRIPTION: This possible pueblo is located near an alpine-like meadow on the first terrace above a tributary of Centerfire Creek, and well within the 330 ft. proposed right-of-way. A two to three room cobble constructed room-block exists on the southwest side of the site. Slight depressions, which may indicate subterranean pithouses, are evident on the southeast side of the site where wind and water erosion is most prominent. These features, coupled with the volume, density, and variation in cultural material collected from this locality, may indicate multiple occupation. A moderate ground cover of grasses and forbs seem to be protecting most parts of the site quite well.

RECOMMENDATION: Flag and protect. This possible multicomponent site is one of the most artifactually prolific prehistoric habitations encountered in that northern portion of the Apache National Forest covered by Route 1-A.

ACTION BY TG&E: Flag and protect.

SITE: NA11,569 TG&E-ANF-57

P.O.T.: F/101 to F/103 (old location)

DATE: Historic Anglo, (ca. Post A.D.1920)

DESCRIPTION: Prior to August 1972, right-of-way planning between P.O.T. F/99 and P.O.T. F/103 was in a general S.9°E. direction. That would have projected the powerline straight up the north slope of the San Francisco Mountains to an apex in the vicinity of Burrow Canyon. In so doing, the centerline of the right-of-way passed through the corral area of NA11,569. The domestic area of that site consists of a handhewn log cabin and is located immediately

west of the now dilapidated corral.

During the above month Bechtel Corporation suggested an alteration in the powerline between the aforementioned P.O.T.'s for engineering reasons. As a result, the presently proposed right-of-way reaches the mountain peak about 1120 ft. 42°W. of the cabin--thus placing the historic site well upslope to the east of the right-of-way and new P.O.T. F/103.

RECOMMENDATION: Flag and protect. Though this site is not in the presently proposed right-of-way, it should nonetheless be guarded against construction related activities. An old forest road empties into a clearing within which the site exists. That road and clearing should not be used for storage or servicing of construction equipment. Neither should the cabin be used as a tool storage shed or shelter for personnel.

ACTION BY TG&E: Flag and protect.

TUCSON GAS AND ELECTRIC COMPANY
SAN JUAN-VAIL TRANSMISSION LINE
APACHE NATIONAL FOREST

APPENDIX III

Archaeological Site Proveniencing by Township, Range, and Section

Site No.	Township	Range	Section	Field No.
NA11,554	T.3 S.	R.20 W.	S.28	TG&E-ANF-29
NA11,555	T.4 S.	R.20 W.	S.09	TG&E-ANF-32
NA11,556	T.4 S.	R.20 W.	S.09	TG&E-ANF-31
NA11,557	T.4 S.	R.20 W.	S.09 & 16	TG&E-ANF-30
NA11,558	T.4 S.	R.20 W.	S.34 & 35	TG&E-ANF-33
NA11,559	T.5 S.	R.20 W.	S.03	TG&E-ANF-34
NA11,560	T.5 S.	R.20 W.	S.03	TG&E-ANF-35
NA11,561	T.5 S.	R.20 W.	S.03	TG&E-ANF-36
NA11,562	T.5 S.	R.20 W.	S.10	TG&E-ANF-37
NA11,563	T.5 S.	R.20 W.	S.10	TG&E-ANF-38
NA11,564	T.5 S.	R.20 W.	S.10 &11	TG&E-ANF-39
NA11,565	T.5 S.	R.20 W.	S.14	TG&E-ANF-40
NA11,566	T.5 S.	R.20 W.	S.23	TG&E-ANF-41
NA11,567	T.5 S.	R.20 W.	S.23	TG&E-ANF-42
NA11,568	T.5 S.	R.20 W.	S.26	TG&E-ANF-43
NA11,569	T.6 S.	R.20 W.	S.27	TG&E-ANF-57

MUSEUM OF NORTHERN ARIZONA
DEPARTMENT OF ANTHROPOLOGY

1972

MUSEUM OF NORTHERN ARIZONA
DEPARTMENT OF ANTHROPOLOGY

ARIZONA PUBLIC SERVICE COMPANY
500 KV SOUTHERN TRANSMISSION SYSTEM
NAVAJO POWER PROJECT
CONSTRUCTION ROADS AND RIGHT-OF-WAY
STATION 4624+00E to STATION 1695+59.40E
PRESCOTT NATIONAL FOREST, BUREAU OF LAND MANAGEMENT,
STATE OF ARIZONA AND PRIVATE LAND
YAVAPAI COUNTY, ARIZONA

Interim Report

for

Archaeological Clearance Investigations From
Right-of-Way Station 4624+00E, U.S. 89A to the
South Rim of Perry Mesa, at Right-of-Way Station 1694.59.40E

Prepared by:

Donald C. Fiero
Salvage Archaeologist

Submitted by:

Alexander J. Lindsay, Jr.
Curator of Anthropology

August 3, 1972

ABSTRACT: The Museum of Northern Arizona conducted an archaeological survey to provide recommendations for antiquity clearance for the proposed Arizona Public Service Company 500 KV Southern Transmission System - Navajo Project. The survey included portions of the Prescott National Forest, U.S. Bureau of Land Management, State of Arizona and private land, and was conducted from U.S. 89A, Right-of-Way Station 4624+00E to the south rim of Perry Mesa, Station 1695+59.40E. Thirty-one archaeological sites were found to be affected by the proposed right-of-way and associated access roads. Archaeological clearance is recommended for construction, with the exception of the 31 archaeological sites described in this interim report.

INTRODUCTION

Archaeologists from the Museum of Northern Arizona conducted an archaeological survey from the intersect of U.S. 89A (Station 4624+00E) to the south rim of Perry Mesa (Station 1695+59.40E). This includes portions of the Prescott National Forest, U.S. Bureau of Land Management, State of Arizona, and private land.

The investigations were conducted on the Arizona Public Service Company 500 KV Southern Transmission System and Howard P. Foley Company's associated access and construction roads. The archaeological survey was made in June and July, 1972.

Thirty-one archaeological sites were found to be affected by the proposed right-of-way and roads. All but one archaeological site are located on Perry Mesa, within approximately 7.0 linear mi. of right-of-way facilities. A tabulation of cultural affiliation and temporal position is found in Appendix I of this interim report.

INVESTIGATIONS

Where applicable, the location of sites has been marked

around the perimeter with blue and white flagging. All sites were assigned field numbers (e.g. APS 500 KV-STS-#), photographed, and surface collections were taken from the sites. These collections are now located at the Museum of Northern Arizona. The locations of the sites are recorded on the Arizona Public Service Company's Plan and Profile serial maps.

RECOMMENDATIONS

Special care and consideration should be given to Perry Mesa because of the archaeological site density, the heretofore unknown nature of the culture in the area, and the resultant impact on the scientific value of the mesa and adjoining regions. To reduce the impact of construction activities, it is recommended that all pedestrian and vehicular traffic be restricted to the right-of-way and designated access roads. It is also recommended that the concrete batch plant be located in a context where its activities and personnel will have the least detrimental effect on the archaeological resource base of the area. It is suggested that the placement of the construction roads within and outside of the right-of-way be modified to conflict as little as possible with the environment, and that the roads be permanently closed at the completion of the project. The Perry Mesa locality is poorly known to the natural, social, and earth sciences. The numerous large and important sites in the area should be nominated to the Arizona State Register of Historic Sites and the National Register of Historic Place Inventory. It is recommended that the various agencies with custodial and protective powers

involved in administering the Perry Mesa area increase surveillance and enforcement of the State and Federal Antiquities Acts. This is of paramount importance for the prevention of further destruction due to prevailing and intense vandalism of the non-renewable resource base of the area.

Further survey and excavations are recommended to determine the nature and extent of the cultural resources on Perry Mesa, and the adjoining area to the south relative to determining the extent of impact of the present APS project on the resource base.

ARIZONA PUBLIC SERVICE COMPANY
500 KV SOUTHERN TRANSMISSION SYSTEM
NAVAJO POWER PROJECT

APPENDIX I

Cultural Affiliation	Temporal Position	Number
Prescott	unknown	1
Salado	Pueblo IV	30
Anglo	1800's	1

ARIZONA PUBLIC SERVICE COMPANY
500 KV SOUTHERN TRANSMISSION SYSTEM
NAVAJO POWER PROJECT

APPENDIX II

Transect Sections cleared for
Construction and Site Locations

Station	Sheet	Recommendations
4624+00 - 470+00		Recommended for clearance
470+00 - 472+00	174E	Not recommended for clearance NA11,491
472+00 - 1336+00		Recommended for clearance
1336+00 - 1338+00	188E	Not recommended for clearance NA11,413
1338+00 - 1345+00	188E	Not recommended for clearance NA11,412
1345+00 - 1364+00		Recommended for clearance
1364+00 - 1372+00	188-189E	Not recommended for clearance NA11,504
1372+00 - 1398+50		Recommended for clearance
1398+50 - 1399+50	189E	Not recommended for clearance NA11,431
1399+50 - 1435+00		Recommended for clearance
1435+00 - 1438+00	190E	Not recommended for clearance NA11,432
1438+00 - 1473+00		Recommended for clearance
1473+00 - 1475+00	190E	Not recommended for clearance NA11,433
1475+00 - 1498+00		Recommended for clearance
1498+00 - 1499+00	191E	Not recommended for clearance NA11,435
1499+00 - 1508+00	191E	Not recommended for clearance NA11,434

APPENDIX II (cont'd)

Station	Sheet	Recommendations
1508+00 - 1520+00		Recommended for clearance
1520+00 - 1524+00	191E	Not recommended for clearance NA11,436
1524+00 - 1526+00	191E	Not recommended for clearance NA11,437
1526+00 - 1530+00	191E	Not recommended for clearance NA11,438
1530+00 - 1535+00	191E	Not recommended for clearance NA11,439
1535+00 - 1539+00	191E	Not recommended for clearance NA11,490
1539+00 - 1540+00		Recommended for clearance
1540+00 - 1542+00	191E	Not recommended for clearance NA11,440
1542+00 - 1543+00		Recommended for clearance
1543+00 - 1545+00	191E	Not recommended for clearance NA11,441
1544+00 - 1545+00	191E	Not recommended for clearance NA11,442
1545+00 - 1552+00		Recommended for clearance
1552+00 - 1553+00	192E	Not recommended for clearance NA11,444
1553+00 - 1564+00		Recommended for clearance
1564+00 - 1565+00	192E	Not recommended for clearance NA11,444
1565+00 - 1575+00		Recommended for clearance
1575+00 - 1576+00	192E	Not recommended for clearance NA11,445
1576+00 - 1579+00		Recommended for clearance
1579+00 - 1580+00	192E	Not recommended for clearance NA11,446
1580+00 - 1589+00		Recommended for clearance

APPENDIX II (cont'd)

Station	Sheet	Recommendations
1589+00 - 1590+00	192E	Not recommended for clearance NA11,447
1590+00 - 1596+00		Recommended for clearance
1596+00 - 1597+00	192E	Not recommended for clearance NA11,448
1597+00 - 1598+00		Recommended for clearance
1598+00 - 1600+00	192E	Not recommended for clearance NA11,449
1600+00 - 1626+00		Recommended for clearance
1626+00 - 1627+00	193E	Not recommended for clearance NA11,414
1627+00 - 1628+00		Recommended for clearance
1628+00 - 1630+00	193E	Not recommended for clearance NA11,503
1630+00 - 1636+00		Recommended for clearance
1636+00 - 1638+00	193E	Not recommended for clearance NA11,415
1638+00 - 1645+00		Recommended for clearance
1645+00 - 1647+00	193E	Not recommended for clearance NA11,450
1647+00 - 1660+00		Recommended for clearance
1660+00 - 1662+00	193E	Not recommended for clearance NA11,451
1662+00 - 1670+00	194E	Not recommended for clearance NA11,452
1666+00 - 1667+00	194E	Not recommended for clearance NA11,453
1670+00 - 1674+00	194E	Not recommended for clearance NA11,469
1674+00 - 1695+59.40		Recommended for clearance

ARIZONA PUBLIC SERVICE COMPANY
500 KV SOUTHERN TRANSMISSION SYSTEM
NAVAJO POWER PROJECT

APPENDIX III

Concordance of Site Numbers with Station Locations

Station	Sheet	Site Number
470+00 - 472+00	174E	NA11,491
1336+00 - 1338+00	188E	NA11,413
1338+00 - 1345+00	188E	NA11,412
1364+00 - 1372+00	188-189E	NA11,504
1398+50 - 1399+50	189E	NA11,431
1435+00 - 1438+00	190E	NA11,432
1473+00 - 1475+00	190E	NA11,433
1498+00 - 1499+00	191E	NA11,435
1498+00 - 1508+00	191E	NA11,434
1520+00 - 1524+00	191E	NA11,436
1524+00 - 1526+00	191E	NA11,437
1530+00 - 1535+00	191E	NA11,438
1535+00 - 1539+00	191E	NA11,490
1535+00 - 1539+00	191E	NA11,439
1540+00 - 1542+00	191E	NA11,440
1543+00 - 1545+00	191E	NA11,441
1544+00 - 1545+00	191E	NA11,442
1552+00 - 1553+00	192E	NA11,443
1564+00 - 1565+00	192E	NA11,444
1575+00 - 1576+00	192E	NA11,445
1579+00 - 1580+00	192E	NA11,446

APPENDIX III (cont'd)

Station	Sheet	Site Number
1589+00 - 1590+00	192E	NA11,447
1596+00 - 1597+00	192E	NA11,448
1598+00 - 1600+00	192E	NA11,449
1626+00 - 1627+00	193E	NA11,414
1628+00 - 1630+00	193E	NA11,503
1636+00 - 1638+00	193E	NA11,415
1645+00 - 1647+00	193E	NA11,450
1660+00 - 1662+00	193E	NA11,451
1662+00 - 1670+00	193E	NA11,452
1666+00 - 1667+00	194E	NA11,453
1670+00 - 1674+00	194E	NA11,469

ARIZONA PUBLIC SERVICE COMPANY
500 KV SOUTHERN TRANSMISSION SYSTEM
NAVAJO POWER PROJECT

APPENDIX IV

Site Descriptions and Recommendations

NA11,491 Ariz. N:12:16(MNA) APS 500 KV-STS-67

Station: 470+00 - 472+00 (Sheet 174E)

Development: Pueblo II?

Description: A one-room field house probably associated with the Prescott Culture. The site has been destroyed by previous vandalism. Site is located off the right-of-way, but near a H. P. Foley access road.

Recommendation: Move H.P. Foley Company's construction road 200 ft. west.

NA11,413 Ariz. N:16:22(MNA) APS 500 KV-STS-39

Station: 1336+00 - 1338+00 (Sheet 188E)

Development: 1800's

Description: An Anglo habitation site and associated corral located near H. P. Foley Company's construction road. Site is located off the right-of-way, but within construction road.

Impact: Indirect

Recommendation: Move H.P. Foley Company's road 300 ft. to the east to avoid site.

NA11,412 Ariz. N:16:21(MNA) APS 500 KV-STS-38

Station: 1338+00 - 1345+00 (Sheet 188E)

Development: Pueblo IV?

Description: An open campsite with depressions possibly representing pithouses. Located within the right-of-way near tower locations.

Impact: Immediate, due to construction activity

Recommendation: Archaeological testing of the possible pithouses and trash. Relocate H. P. Foley Company's construction road to the east to avoid as much of the site as possible. Flag and protect, keep heavy equipment beyond flagged area until testing or excavation is complete.

NA11,504 Ariz. N:16:58(MNA) APS 500 KV-STS-69

Station: 1364+00 - 1372+00 (Sheets 188-189E)

Development: Probably associated with the large Pueblo IV sites in the area.

Description: Many cleared garden pots and stacked boulders located within the right-of-way near tower locations and on H. P. Foley Company's roads.

Impact: Immediate due to construction activity and fragile nature of the site.

Recommendation: Low level aerial photography should be made of the site; site is to be mapped; pollen samples are to be taken from those garden plots endangered; another alternative is that soil be placed on the garden plots to a compacted depth of 2 ft. in those areas endangered including portions of the H. P. Foley Company's access and construction roads and tower locations (701-702E, 698-699W); disturbance in the area should be contained to the minimum, and restricted to areas padded with soil.

NA11,431 Ariz. N:16:32(MNA) APS 500 KV-STS-42

Station: 1398+50 - 1399+50 (Sheet 189E)

Development: Pueblo IV

Description: A mescal roasting pit 10 m. in diameter, 100 ft. west of H. P. Foley Company's access road, off the right-of-way.

Impact: Indirect

Recommendation: Flag and protect, keep heavy equipment beyond flagged area.

NA11,432 Ariz. N:16:33(MNA) APS 500 KV-STS-43

Station: 1435+00 - 1438+00 (Sheet 190E)

Development: Pueblo IV

Description: A sherd area 100 m. in diamter, within the right-of-way and near towers and construction road.

Impact: Immediate, because of construction activity

Recommendation: The area around the tower locations should be tested. H. P. Foley Company's construction road should be moved to avoid as much as possible. Flag and protect, keep heavy equipment beyond flagged area until testing or excavation is complete.

NA11,433 Ariz. N:16:34(MNA) APS 500 KV-STS-44

Station: 1473+00 - 1475+00 (Sheet 190E)

Devlopment: Pueblo IV

Description: A four-room pueblo affiliated with the Salado Culture located near H. P. Foley Company's access road, but off the right-of-way.

Impact: Immediate, because of construction activity.

Recommendation: Relocate the access road 300 - 400 ft. south of its present location.

NA11,435 Ariz. N:16:36(MNA) APS 500 KV-STS-56
Station: 1498+00 - 1499+00 (Sheet 191E)
Development: Pueblo IV
Description: A five-room Salado (?) pueblo, located within the right-of-way near towers and construction road.
Impact: Immediate because of construction activity.
Recommendation: Flag and protect, complete excavation of all structures and trash necessary. Keep heavy equipment beyond flagged area until excavations are complete.

NA11,434 Ariz. N:16:35(MNA) APS 500 KV STS-45
Station: 1498+00 - 1508+00 (Sheet 191E)
Development: Pueblo IV
Description: A large site consisting of four prominent mounds and associated smaller complexes that comprise a total count of about 230 rooms. The edge of the site is 35 ft. from the right-of-way.
Impact: Indirect and long-term
Recommendation: Keep heavy equipment and personnel away from the site. Recommend that the site be added to the Arizona State Register of Historic Sites and the National Register of Historic Place Inventory.

NA11,436 Ariz. N:16:37(MNA) APS 500 KV-STS-54
Station: 1520+00 - 1524+00 (Sheet 191E)

Development: Pueblo IV

Description: Two or three field houses and associated agricultural terraces, located within the right-of-way.

Impact: Indirect

Recommendation: Flag and protect, keep heavy equipment beyond flagged area.

NA11,437 Ariz. N:16:38(MNA) APS 500 KV-STS-55

Station: 1524+00 - 1526+00 (Sheet 191E)

Development: Pueblo IV

Description: A three to four-room pueblo, located within the right-of-way and near tower locations.

Impact: Immediate, because of construction activity.

Recommendation: Flag and protect, keep heavy equipment beyond flagged area until excavation of structures and trash complete.

NA11,438 Ariz. N:16:39(MNA) APS 500 KV-STS-53

Station: 1530+00 - 1535+00 (Sheet 191E)

Devlopment: A two to three-room pueblo with possible field houses associated, partially within the right-of-way.

Impact: Immediate because of construction activity

Recommendation: Flag and protect, excavation of all structures and trash endangered required. Keep heavy equipment beyond flagged area until excavations are complete.

NA11,490 Ariz. N:16:56(MNA) APS 500 KV-STS-66

Station: 1535+00 - 1539+00 (Sheet 191E)

Development: Pueblo IV

Description: A forty-eight-room Salado(?) pueblo with three outlying rooms and two mescal roasting pits, located off the right-of-way but near H.P. Foley Company's access road.
Impact: Indirect and long term.
Recommendation: Keep heavy equipment and personnel away from the area. Recommend that the site be added to the Arizona State Register of Historic Sites and the National Register of Historic Place Inventory.

NA11,439 Ariz. N:16:40(MNA) APS 500 KV-STS-57
Station: 1535+00 - 1539+00 (Sheet 191E)
Development: Pueblo IV
Description: A 50-room Salado(?) pueblo with four associated mescal roasting pits, located off the right-of-way but near H. P. Foley Company's access road.
Impact: Indirect and long term
Recommendation: Keep heavy equipment and personnel beyond the area. Recommend that the site be added to the Arizona State Register of Historic Sites and the National Register of Historic Place Inventory.

NA11,440 Ariz. N:16:41(MNA) APS 500 KV-STS-52
Station: 1540+00 - 1542+00 (Sheet 191E)
Development: Pueblo IV
Description: A sherd area 50 m. in diamter, situated within the right-of-way, near towers and construction road.
Impact: Immediate, because of construction activity.
Recommendation: Flag and protect, archaeological testing necessary.

Keep heavy equipment beyond the flagged area until testing and excavation is complete.

NA11,441 Ariz. N:16:42(MNA) APS 500KV-STS-46
Station: 1543+00 - 1545+00 (Sheet 191E)
Development: A two or three-room pueblo, located within the right-of-way and near tower locations.
Recommendation: Flag and protect, archaeological excavation necessary. Keep heavy equipment beyond the flagged area until excavation is complete.

NA11,442 Ariz. N:16:43(MNA) APS 500 KV-STS-51
Station: 1544+00 - 1545+00 (Sheet 191E)
Development: Pueblo IV
Description: A two or three-room pueblo, located within the right-of-way and near H. P. Foley Company's construction road.
Impact: Indirect
Recommendation: Flag and protect, keep heavy equipment beyond flagged area. Relocate H. P. Foley Company's road so as to avoid the site.

NA11,443 Ariz. N:16:44(MNA) APS 500 KV-STS-47
Station: 1552+00 - 1553+00 (Sheet 192E)
Development: Pueblo IV
Description: One or two field houses, located within the right-of-way and near tower locations.
Impact: Immediate because of construction activity.
Recommendation: Flag and protect, archaeological testing and/of

excavation necessary. Keep heavy equipment beyond flagged area until excavation is complete.

NA11,444 Ariz. N:16:45(MNA) APS 500 KV-STS-48

Station: 1564+00 - 1565+00 (Sheet 192E)

Development: Pueblo IV

Description: A one-room field house, located within the right-of-way.

Impact: Indirect

Recommendation: Flag and protect, keep heavy equipment beyond flagged area.

NA11,445 Ariz. N:16:46(MNA) APS 500 KV-STS-50

Station: 1575+00 - 1576+00 (Sheet 192E)

Development: Pueblo IV

Description: Two field houses, within the right-of-way near tower locations.

Impact: Immediate because of construction activity.

Recommendation: Flag and protect, archaeological excavation of structures and trash necessary. Keep heavy equipment beyond flagged area until excavation complete.

NA11,446 Ariz. N:16:47(MNA) APS 500 KV-STS-49

Station: 1579+00 - 1580+00 (Sheet 192E)

Development: Pueblo IV

Description: A one-room field house, located within the right-of-way.

Impact: Indirect

Recommendation: Flag and protect, keep heavy equipment beyond flagged area.

NA11,447 Ariz. N:17:48(MNA) APS 500 KV-STS-58

Station: 1589+00 - 1590+00 (Sheet 192E)

Development: Pueblo IV

Description: Three field houses, located within the right-of-way near tower locations.

Impact: Immediate, because of construction activity.

Recommendation: Flag and protect, archaeological excavation of all structures and trash necessary. Keep heavy equipment beyond flagged area until excavation is complete.

NA11,448 Ariz. N:16:49 (MNA) APS 400 KV-STS-59

Station: 1596+00 - 1597+00 (Sheet 192E)

Development: Pueblo IV

Description: A one-room field house located within the right-of-way.

Impact: Indirect

Recommendation: Flag and protect, keep heavy equipment beyond flagged area.

NA11,449 Ariz. N:16:50(MNA) APS 500 KV-STS-60

Station: 1598+00 - 1600+00 (Sheet 192E)

Development: Pueblo IV

Description: A one-room field house and associated agricultural terraces located within the right-of-way.

Impact: Indirect

Recommendation: Flag and protect, keep heavy equipment beyond the flagged area.

NA11,414 Ariz. N:16:23(MNA) APS 500 KV-STS-40

Station: 1626+00 - 1627+00 (Sheet 193E)

Development: Pueblo IV

Description: A six to seven-room complex, 30 m. in diamter, located off the right-of-way but near a H. P. Foley Company access road.

Impact: Indirect

Recommendation: Flag and protect, keep heavy equipment beyond flagged area. Relocate H. P. Foley Company's construction road 500 ft. to the west to avoid the site.

NA11,503 Ariz. N:16:57(MNA) APS 500 KV-STS-68

Station: 1628+00 - 1630+00 (Sheet 193E)

Development: Pueblo IV

Description: A two-room field house situated at the extreme eastern edge of the right-of-way.

Impact: Indirect.

Recommendation: Flag and protect, keep heavy equipment beyond the flagged area.

NA11,415 Ariz. N:16:24(MNA) APS 500 KV-STS-41

Station: 1636+00 - 1638+00 (Sheet193E)

Development: Probably Pueblo IV

Description: A petroglyph site on the east edge of a small site, located within the right-of-way and near a tower location.

Impact: Immediate because of construction activities.

Recommendation: Move Tower 715W at least 60 ft. to the north, provided that the possible movement of adjacent towers does not

cause greater destruction.

NA11,450 Ariz. N:16:51(MNA) APS 500 KV-STS-64

Station: 1645+00 - 1647+00 (Sheet 193E)

Development: Pueblo IV

Description: A two-room field house and associated trash located off the right-of-way but near an H. P. Foley Company construction road.

Impact: Indirect

Recommendation: Flag and protect, keep heavy equipment beyond flagged area. Relocate H. P. Foley Company's construction road to avoid the area.

NA11,451 Ariz. N:16:52(MNA) APS 500 KV-STS-61

Station: 1660+00 - 1662+00 (Sheet 193E)

Development: Pueblo IV

Description: A four-room pueblo and associated trash located off the right-of-way.

Impact: Indirect

Recommendation: Flag and protect, keep heavy equipment beyond flagged area.

NA11,452 Ariz. N:16:53(MNA) APS 500 KV-STS-62

Station : 1662+00 - 1670+00 (Sheet 194E)

Development: Pueblo IV

Description: A 29-room pueblo of hollow, square outline. This site is relatively undisturbed by vandalism at the present time.

Impact: Indirect.

Recommendation: Keep heavy equipment and personnel beyond area. The site is 150 ft. from the west edge of the right-of-way. Recommend that the site be added to the Arizona State Register of Historic Sites and the National Register of Historic Place Inventory. The site should be considered for excavation.

NA11,453 Ariz. N:16:54(MNA) APS 500 KV-STS-63
Station: 1666+00 - 1667+00 (Sheet 194E)
Development: Pueblo IV
Description: A two-room field house and associated agricultural terraces located within the right-of-way.
Impact: Immediate because of construction activity.
Recommendation: Flag and protect, complete archaeological excavation necessary. Keep heavy equipment beyond the flagged area until excavation is complete.

NA11,469 Ariz. N:16:55(MNA) APS 500 KV-STS-65
Station: 1670+00 - 1674+00 (Sheet 194E)
Development: Pueblo IV
Impact: Immediate because of construction activity
Description: A one-room field house located within the right-of-way and near a tower location.
Recommendation: Flag and protect, complete excavation required. Keep heavy equipment beyond the flagged area until excavation is complete.

ARIZONA PUBLIC SERVICE COMPANY
500 KV SOUTHERN TRANSMISSION LINE
NAVAJO POWER PROJECT

APPENDIX V

Recommendations to Arizona Public Service Company

NA11,491 - Relocate H. P. Foley Company's road 200 ft. to the west. Site destroyed by previous damage.

NA11,413 - Relocate H. P. Foley Company's road 300 ft. to the east.

NA11,412 - Archaeological testing of all structures and trash within the right-of-way. Relocate H. P. Foley Company's construction road to the east to avoid as much of site site as possible.

NA11,504 - Low level aerial photography should be made; the site should be mapped; a palynologist should take samples; another alternative is the soil should be employed as a padding to areas os the site that are endangered; disturbance should be restricted to the padded area.

NA11,431 - Flag and protect, keep heavy equipment beyond flagged area.

NA11,432 - Archaeological testing in the area to be disturbed by towers and road. H. P. Foley Company's road should be relocated to do the minimum of damage.

NA11,433 - Relocate H. P. Foley Company's access road 300-400 ft. to the south.

APPENDIX V (cont'd)

NA11,435 - Complete excavation of all structures and trash within the right-of-way.

NA11,434 - Restrict area to personnel ; site should be nominated to the Arizona State Register of Historic Sites and the National Register of Historic Place Inventory.

NA11,436 - Flag and protect, keep heavy equipment beyond flagged area.

NA11,437 - Excavate all structures and trash within the right-of-way.

NA11,438 - Excavate all structures and trash within the right-of-way.

NA11,490 - Restrict the area to personnel; recommend that the site be added to the Arizona State Register of Historic Sites and the National Register of Historic Place Inventory.

NA11,439 - Restrict the area to personnel; recommend that the site be added to the Arizona State Register of Historic Sites and the National Register of Historic Place Inventory.

NA11,440 - Archaeological testing necessary for all structures and trash within the right-of-way.

NA11,441 - Archaeological excavation of all structures and trash within the right-of-way.

NA11,442 - Relocate H. P. Foley Company's construction road to avoid the site.

APPENDIX V (cont'd)

NA11,443 - Archaeologaical excavation of all structures and trash within the right-of-way.

NA11,444 - Flag and protect, keep heavy equipment beyond flagged area.

NA11,445 Archaeological excavation of all structures and trash within the right-of-way.

NA11,446 Flag and protect, keep heavy equipment beyond flagged area.

NA11,447 - Archaeological excavation of all structures and trash within the right-of-way.

NA11,448 Flag and protect, keep heavy equipment beyond flagged area.

NA11,449 - Flag and protect, keep heavy equipment beyond flagged area.

NA11,414 - Relocate H. P. Foley Company's road 500 ft. to the west to avoid site.

NA11,503 - Flag and protect, keep heavy equipment beyond flagged area.

NA11, 415 - Move Tower 715W at least 60 ft. to the north to avoid blasting around the site, unless the movement of adjacent towers would cause greater disturbance to the antiquities.

APPENDIX V (cont'd) .

NA11,450 - Relocate H.P. Foley Company's construction road to avoid the area.

NA11,452 - Restrict the area to personnel. Recommend that the site be added to the Arizona State Register of Historic Sites and the National Register of Historic Place Inventory. The site should be considered for excavation.

NA11,453 - Complete excavation of all structures and trash within the right-of-way

NA11,453 - Complete excavation of all structures and trash within the right-of-way.

NA11,469 - Complete excavation of all structures and trash within the right-of-way.

MUSEUM OF NORTHERN ARIZONA
DEPARTMENT OF ANTHROPOLOGY

1972

MUSEUM OF NORTHERN ARIZONA
DEPARTMENT OF ANTHROPOLOGY

ARIZONA PUBLIC SERVICE COMPANY

500 KV SOUTHERN TRANSMISSION SYSTEM

NAVAJO POWER PROJECT RIGHT-OF-WAY

STATION 2808+00W TO STATION 2960+00W

KAIBAB NATIONAL FOREST

YAVAPAI COUNTY, ARIZONA

Interim Report

Archaeological Clearance Investigations For the Realignment of the Right-of-Way Station 2808+00W to Station 2960+00W

Prepared by:

Donald C. Fiero

Salvage Archaeologist

Submitted by:

Alexander J. Lindsay, Jr.

Curator of Anthropology

May 9, 1972

ABSTRACT: The Museum of Northern Arizona conducted an archaeological survey for antiquity clearance on the proposed Arizona Public Service Company 500 KV Southern Transmission System - Navajo Power Project. The survey included the realignment of the proposed right-of-way between Station 2808+00W and 2960+00W within the Kaibab National Forest, Yavapai County, Arizona. Two archaeological sites have been located. Archaeological clearance is recommended for construction with the exception of the two archaeological sites described in this interim report.

INTRODUCTION

Archaeologists from the Museum of Northern Arizona conducted an archaeological survey on the Kaibab National Forest, Yavapai County, Arizona, from Right-of-Way Station 2808+00W to Station 2960+00W. This includes the proposed realignment of the right-of-way across Devil Dog Canyon and the associated Howard P. Foley Company's access and construction roads. The survey was conducted by Donald C. Fiero during May, 1972.

One archaeological site is situated within the proposed right-of-way, and the other is situated within the prism of a proposed construction road. A tabulation of the cultural affiliation and tempoarl position is as follows:

Cultural Affiliation:	Temporal Position:	Number:
Prescott	Pueblo II	1
Prescott	Pueblo II	1

INVESTIGATIONS

Where applicable, the location of the sites has been marked with blue and white flagging around the perimeter. All sites were assigned field numbers (e.g. APS 500 KV - STS #) and photographed. Surface collections taken from the site are at the Museum of Northern Arizona. The locations of the sites are recorded on the Arizona Public Service Company's Plan and Profile aerial maps.

TRANSECT SECTIONS CLEARED FOR CONSTRUCTION AND SITE LOCATIONS

Station	Sheet	Recommendations
2808+00 - 2892+00		Recommended for Clearance
2892+00 - 2900+00	132-W	NA11,354
2900+00 - 2956+00		Recommended for Clearance
2956+00 - 2960+00	133-W	NA11,236
Construction road between Towers 496E and 497E, off the right-of-way		

RECOMMENDATIONS

Clearance for construction is recommended for sections indicated by Station numbers. Clearance

is not recommended for sites whose locations are designated above and listed in Appendix I of this report.

ARIZONA PUBLIC SERVICE COMPANY

500 KV SOUTHERN TRANSMISSION SYSTEM

NAVAJO POWER PROJECT

APPENDIX I

Station	Sheet	Site Number
2892+00 - 2900+00	132-W	NA11,354
2956+00 - 2960+00	133-W	NA11,236
Construction road between Towers 497E and 497E, off the right-of-way		

ARIZONA PUBLIC SERVICE COMPANY

500 KV SOUTHERN TRANSMISSION SYSTEM

NAVAJO POWER PROJECT

APPENDIX II

NA11,354 - Ariz. H:15:5(MNA) APS 500 KV - STS #37;KNF

Station: 2892+00 - 2900+00 (Sheet 132-W)

Development: Pueblo II

Description: A one-or two-room structure affiliated with the Prescott Culture located on the south rim of Devil Dog Canyon.

Recommendation: Flag and protect. Complete excavation of all structures and trash is necessary due to the proximity of tower locations, construction roads, future vandalism, and wasting. Keep heavy equipment beyond the area until excavations are completed.

NA11,263 - Ariz. H:15:1(MNA) APS 500 KV - STS #31; KNF

Station: 2956+00 - 2960+00 (Sheet 133-W)

Development: Pueblo II

Description: A sherd and lithic area 20 m. in diameter, affiliated with the Prescott located within the prism of the proposed construction road between Towers 496E and 497E, off the right-of-way.

Recommendation: Flag and protect. Keep heavy equipment beyond the flagged area; re-route the proposed road around the flagged area.

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ARIZONA PUBLIC SERVICE COMPANY

500 KV SOUTHERN TRANSMISSION SYSTEM

NAVAJO POWER PROJECT

CONSTRUCTION ROADS AND RIGHT-OF-WAY

STATION 3050+00E TO STATION 4624+00E

PRESCOTT NATIONAL FOREST AND PRIVATE LAND

COCONINO AND YAVAPAI COUNTIES, ARIZONA

Interim Report

for

Archaeological Clearance Investigations
Prescott National Forest Boundary at Right-of-Way
Station 3050+00E to U.S. 89A
At Right-of-Way Station 4624+00E

Prepared by:

Donald C. Fiero

Salvage Archaeologist

Submitted by:

Alexander J. Lindsay, Jr.

Curator of Anthropology

May 8, 1972

ABSTRACT: The Museum of Northern Arizona conducted an archaeological survey to provide recommendations for antiquity clearance for the proposed Arizona Public Service Company 500 KV Southern Transmission System - Navajo Power Project. The survey included the Prescott National Forest from its boundary with the Kaibab National Forest, Right-of-Way Station 3050+00E to the intersect with U.S. 89A, Station 4624+00E, Coconino and Yavapai Counties, Arizona. Two archaeological sites have been located. Archaeological clearance is recommended for construction, with the exception of the two archaeological sites described in this interim report.

INTRODUCTION

Archaeologists from the Museum of Northern Arizona conducted an archaeological survey on the Prescott National Forest and private land, from the Kaibab - Prescott National Forests boundary (Station 3050+00E) to the intersect with U.S. Highway 89-A (Station 4624+00E), Coconino and Yavapai Counties, Arizona. The survey was conducted on the Arizona Public Service Company 500 KV Southern Transmission System and the associated Howard P. Foley Company's construction and access roads. The investigations were made by Donald C. Fiero, Robert W. Munson, and Jimmie Dougi during April and May, 1972.

Two archaeological sites are situated within the proposed right-of-way. A tabulation of the cultural affiliation and temporal position is as follows:

Cultural Affiliation	Temporal Position	Number
Unknown	Pueblo II?	1
Prescott	Pueblo II	1

INVESTIGATIONS

Where applicable, the location of sites has been marked with blue and white flagging around the perimeter. All sites were assigned field numbers (e.g. APS 500 KV-STS#), photographed, and surface collections were taken from the sites. These collections are now located at the Museum of Northern Arizona. The locations of the sites are recorded on the Arizona Public Service Company's Plan and Profile aerial maps.

TRANSECT SECTIONS CLEARED FOR CONSTRUCTION AND SITE LOCATIONS

Station	Sheet	Recommendations
3050+00 - 3110+00		Recommended for Clearance
3110+00 - 3112+00	135-E	NA11,321
3112+00 - 3916+00		Recommended for Clearance
3916+00 - 3920+00	149-E	NA11,353
3920+00 - 4624+00		Recommended for Clearance

RECOMMENDATIONS

Clearance for construction is recommended for the sections indicated by station numbers. Clearance is not recommended for sites whose locations are designated previously and listed in Appendix I of this report.

ARIZONA PUBLIC SERVICE COMPANY

500 KV SOUTHERN TRANSMISSION SYSTEM

NAVAJO POWER PROJECT

APPENDIX I

Station	Sheet	Site Number
3110+00 - 3112+00	135-E	NA11,321
3916+00 - 3920+00	149-E	NA11,353

ARIZONA PUBLIC SERVICE COMPANY

500 KV SOUTHERN TRANSMISSION SYSTEM

NAVAJO POWER PROJECT

APPENDIX II

NA11,321 - Ariz. H:15:2(MNA) APS 500 KV - STS #32

Station: 3110+00 - 3112+00 (Sheet 135-E)

Development: Pueblo II?

Description: A lithic workshop 10 m. in diameter

Recommendation: Flag and protect. Keep tower locations and heavy equipment beyond flagged area.

NA11,351 - Ariz. N:3:1(MNA) APS 500 KV - STS #36

Station: 3916+00 - 3920+00 (Sheet 149-E)

Development: Pueblo II

Description: A one-room field house associated with the Prescott Culture.

Recommendation: Flag and protect. Complete excavation of all structures and trash within the right-of-way is necessary due to the proximity of the site to Tower 556E. Keep heavy equipment beyond flagged area until excavations are completed.

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ARIZONA PUBLIC SERVICE COMPANY
NAVAJO POWER PROJECT, 500 KV SOUTHERN TRANS. SYSTEM
TRANSMISSION LINE RIGHT-OF-WAY, PAGE TO PHOENIX
KAIBAB NATIONAL FOREST - WILLIAMS DISTRICT
COCONINO AND YAVAPAI COUNTIES, ARIZONA

Interim Report

for

Archaeological Clearance Investigations
on the Transmission Line Right-of-way
Station 2542+00W to Station 3050+00E
On the Kaibab National Forest
Williams District

Prepared by:

Donald C. Fiero

Salvage Archaeologist

Submitted by:

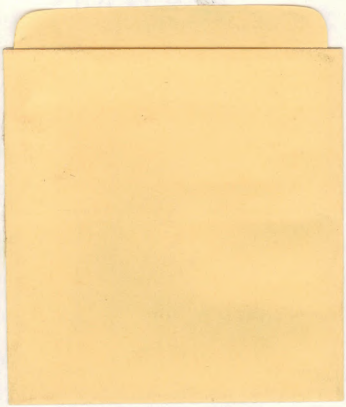
Alexander J. Lindsay, Jr.

Curator of Anthropology

February 7, 1972

ABSTRACT: Museum of Northern Arizona archaeologists conducted an archaeological survey of the proposed Arizona Public Service Company 500 KV Southern Transmission System - Navajo Project Right-of-way on the Williams District of the Kaibab National Forest, Coconino and Yavapai Counties, Arizona. No archaeological nor historical remains were found in the proposed right-of-way between Stations 2542+00W and 3050+00E. Antiquity clearance is recommended for this section of the project.

Archaeologists from the Museum of Northern Arizona conducted an archaeological survey to provide recommendations for antiquity clearance for the proposed Arizona Public Service Company 500 KV Southern Transmission System - Navajo Project. The investigations were carried out on the Williams District of the Kaibab National Forest, Coconino and Yavapai Counties, Arizona. The right-of-way transect between Interstate 40, Station 2542+00 (Sheet 127W) and the Prescott National Forest boundary, Station 3050+00 (Sheet 135E) were investigated. No historical nor archaeological remains were located situated within the proposed right-of-way.

Recommendations

Antiquity clearance is recommended for construction between Right-of-way Station 2542+00 (Sheet 127W) and Station 3050+00 (Sheet 135E).